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EDITORIAL.

SOWING THE WIND AND REAPING THE WHIRLWIND.

"If a law were simultaneously enacted in every State of the Union which fosters a veterinary college to compel every prospective student to take a matriculant examination, and every graduate to pass the Board of Regents, it would be fair for all hands. Where, however, one State places barriers in front of her colleges, and other States hold out inducements to receive them, the result is unfair. Young men seeking to acquire a professional knowledge will not select a seat of learning which is so hampered by State laws as to make his chances of success less than he can procure in other States. There can be no doubt but that the framing of the recent law was primarily in the interest of higher education, but the schools in this State cannot hope to attract an increased number of students from other States who expect to locate outside of New York

—*Editorial in REVIEW, October, 1895.*

We have never laid claim to being a prophet nor the son of one, but the above quotation from these pages, printed more than two years ago, shows that the effect of a cause was pretty accurately foreseen. If this had been written to-day as a history instead of a prophecy, the principal change in its construction would be in the fact that the disastrous working of the Regents' regulations was not sufficiently appreciated. For instance, we did not foresee that, not only "could the schools in this State not hope to attract students from other States," but that their unreasonable demands upon those young men resident in the Empire State seeking to enter her medical schools, would be driven precipitately from within her borders to acquire their education. But all this has been done, and more than this. It has so reduced the attendance at her medical, dental, and veter-

inary colleges as to discourage them and break their enthusiasm, and when this has been accomplished their greatest factor for good has been destroyed.

Three years ago the matriculant requirement to enter a veterinary college in New York State was the satisfactory exhibition of the possession of a good common English education, accompanied by evidences of good moral character. When the colleges placed themselves under the Regents, who, at first made a moderate and reasonable demand of proficiency, the number of students decreased about one-third, but, as a period of unprecedented financial and commercial depression had settled upon the country, their requirements could not be charged solely with the deflection; when their demands reached twenty-four counts a still greater slump occurred, though students seemed willing to risk their fates for the sake of greater proficiency; but when the Regents stepped forward for the session of 1897-98 and asked young men seeking a knowledge of medical, dental, and veterinary sciences to put up forty-eight counts, including subjects totally irrelevant to the professions they essayed to enter, they balked, retreated, and departed for other States, whose laws are more in keeping with progress and common sense, and where higher education is attained by steps and not by flights.

The effect of the drain upon the colleges is not so apparent this year as it will be next, nor the next, because all have those in attendance who entered under the lesser requirement; but when they have been graduated, when the classes consist only of those who have matriculated under the forty-eight counts, little else than empty benches will greet the eyes of the faculties. If publication were made to-day of the actual number of students enrolled under the latest demand of the Regents, we fear that even that body of sanguinary gentlemen would be aghast at the ruin they have wrought to the once far-famed medical schools of the Excelsior State. If the men who have formulated the forty-eight counts can explain what proficiency in a veterinary student they hope to enhance by requiring him

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to pass a matriculant examination in "civics," "economics," and "rhetoric," they will display more knowledge than one would suppose they possessed if they judged them by the standard set in their demands of the student.

There is only one salvation for the professional schools of New York State, and that consists in a modification of the law; an amendment, having higher education as the objective point, but tempered by reasonable requirements, with some regard for the perpetuity of our honorable institutions, and the welfare of the Commonwealth.

THE MODERN HORSE SHOW.

The exhibition of horses in the show ring is comparatively a new thing in this country. Agricultural and live stock fairs, where horses and other animals are exhibited in competition, are much older institutions. The "horse show," intended for the exhibition and competition of the soliped only, of different breeds and in different capacities, patronized by fashionable society, dates back but a few years. During the depressed days in all industries the value of horses decreased to such an extent that their treatment during sickness or disability was often not attempted, for the reason that it was cheaper to buy a new one at the prevailing low prices, than to bother with the incapacitated one. This was extremely disheartening and unprofitable to the veterinarian. No one at all posted upon current events will gainsay the assertion that horseflesh is rapidly recovering its normal condition in value and utility, and that the bicycle craze is just as rapidly diminishing in popularity among those who ever had any love for the horse or who can afford the pleasure and luxury of his maintenance. Nothing has done more to sustain and increase an interest in the soliped as a pleasure animal than the modern horse show. They have multiplied so rapidly that almost every city of any pretensions has its annual exhibition. A great deal of money is thus thrown into the pockets of the breeder, the dealer, and the veterinarian by exhibitors in their efforts to capture the blue ribbon, and the horse itself is greatly

benefitted by the encouragement thus given to produce a better class of animal. But, as with everything in America, the tendency is to overdo, to pervert its purposes into commercial channels, and finally to precipitate a boomerang. The fall shows of 1897 have had a greater degree of success than ever before; larger prices have been paid for eligibles, and the entries have been record breaking. But a large percentage of these entries were the property of dealers, placed there in the hope that the acquirement of a ribbon would so enhance the money value of the recipient as to result in a handsome increase in the price which he will fetch at the "horse-show sale" which is to immediately follow the "show." We have been told that a Western dealer has returned to one of the horse show associations where he exhibited, with his compliments, the money prizes won by his horses, being content with the ribbons and the pecuniary good they will result in to his entries. Whether a knowledge of the exhibitor's intention has influenced the decision of the judges or not, such a transaction is monstrous, and can only work the greatest injury to the show, and the cause which it was established to foster and encourage. Neither is it fair competition to expect a private owner to exhibit his horses by the side of the dealer, who is working for a single object, and can afford to bestow more time and money upon his exhibit than if it were intended for service in his private stable. Besides, there is always the suspicion that the dealer is favored, and it will not be very long before a private owner will refuse to place his horse in a class where a favored dealer has one or more entries. The time to check an evil is before its baneful influences have become strikingly manifest, and the REVIEW sounds the early note of warning that unless these entries be restricted or refused altogether, the popular and profitable horse show will soon enter a period of decadence that will mean its ultimate extinction.

ALTHOUGH the decision of the Executive Committee, U. S. V. M. A., as to the next meeting place had not been received when the REVIEW went to press, Omaha looked like a winner.

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FOR THE IMPROVEMENT OF MEAT INSPECTION.

We print elsewhere an account of a public meeting held in Philadelphia, under the auspices of the Woman's Health Protective Association, at which the subject of the meat supply of that city was made the occasion for very full consideration, and which has caused a great awakening of public interest in the vital question, and which can but result in the greatest good to the health and wealth of that and other municipalities. The meeting was largely the outcome of agitation started by some of her public-spirited veterinarians, who not only made addresses themselves and clearly showed the sources of contamination and the inadequacy of present methods, but they induced many prominent veterinarians from other points to lend the strength of their presence and arguments for the furtherance of the objects. Among those who addressed the meeting were Dr. D. E. Salmon, Chief of the Bureau of Animal Industry, Washington; Dr. A. W. Clement, State Veterinarian of Maryland; Dr. H. D. Gill, of the New York Health Board, and Dr. R. S. Huidekoper, President of the Veterinary Medical Association of New York County.

The effort, we are assured through a letter from Dr. W. Horace Hoskins, who was largely instrumental in the success of the meeting, "has resulted in a movement which will terminate in a better system of meat inspection and the removal of many of the features that are now so objectionable in the system that is now in force."

Such a concerted movement will do more good than all the pages that can be written on the subject, and the example of the Philadelphians should be followed by the veterinarians of every city where lax inspection laws maintain, and that means in every city of the Union.

PROFESSIONAL COURTESY.

That veterinary science is a progressive science no one will deny who is at all familiar with the vast amount of original research and discovery that is given to the world each year by its

members. These discoveries are often of the utmost importance to the human race, preventing in a great many instances the spread of epidemic diseases among man and his domestic animals. That men engaged in original lines of research, such as biology or its kindred branches of medicine and surgery, often find themselves sorely in need of scientific advice and direction, none will deny. That these men will, as a matter of course, naturally turn to the members of their own particular profession to seek this knowledge or information they are in quest of, is but natural to suppose. Many of the most important discoveries in the field of human medicine have often been the result of the knowledge gained by the investigator from questions sent to practitioners in all parts of the world and the answers returned thereto. Professional pride and courtesy should be just as strong among the members of the veterinary profession as in that of the medical; it is a duty we owe both to ourselves and our fellow practitioner, to answer cheerfully and promptly as best we can all communications sent to us from a distance by a professional brother who is seeking after legitimate knowledge in our noble profession.

W. J. M.

LEADVILLE, COLORADO, has secured the necessary action by her local Board of Health to inaugurate dairy inspection for a city in the clouds. If such advance can be secured by intelligent persistency for public sanitation for a city in the mountains of Colorado, ought not veterinarians in other cities be encouraged to agitate the subject for their respective localities?

A COMMENDABLE EXAMPLE.—Attention is called to the two case reports of Dr. McCrank, of Plattsburgh, N. Y., and his remarks concerning the interchange of professional opinions through the medium of the journals, and the beneficial effects which they will bring about. The REVIEW has ever held these views, and has striven hard to promulgate them among its readers.

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ORIGINAL ARTICLES.

SOME REMARKS ON ANTI-HOG CHOLERA SERUM.

BY DR. C. FISCH, ST. LOUIS, MO.

Notwithstanding the eminent work done by men like Salmon, Theobald Smith, Billings, and others, the question of specific causative micro-organisms in hog cholera, swine pest and swine fever, has not been cleared up to the point of allowing a successful attempt at establishing an etiologic therapy in these diseases. A part of the confusion reigning in this domain is no doubt due to the fact that in the laboratories a great number of bacteria have been cultivated and experimented upon under the name of hog cholera or swine pest bacilli, which in reality had no relation to these diseases whatsoever. This, especially, pertains to the work of Metschnikoff and of his disciples. Another group of observers has been misled by the protean nature of the epizootic in question, and by the phenomenon, that swine pest and hog cholera may be met with both of them in one and the same animal, either coördinated or the one grafted, as it were, upon the other. This fact has, among others, been the stumbling block for Voges,* who in an otherwise eminently able discourse, has accumulated a valuable mass of material.

Whenever we attempt to deal with swine plague (the word "swine pest" ought to be used only comprehensively for swine plague and hog cholera) and hog cholera, we must first of all remember that either one of them may appear in one of three principal types: as a mainly cutaneous, broncho-pulmonal, or intestinal disease, and that very often two of these types combine to form a picture of mixed symptoms. Omitting the cutaneous type as the least frequent, the two others combine in such varying degrees, that practically no one case resembles the other. It is true that in true hog cholera the intestinal symptoms largely predominate, while swine plague as a rule exhibits

* Zeitschr. für Hygiene und Infektionskrankh. XXIII, p. 149 ff.

a more equal affection of both respiratory and digestive apparatus, but this is so little constant, that it can only tend to increase the confusion to reserve the name of pneumo-enteritis for the latter affection. The word "pneumo-enteritis" ought only to be used with the meaning that first Klein connected with it, that is, as indicating a pulmonary and intestinal affection in general, without regard to the specific causative agent (swine fever). For our purposes it may be sufficient to mention that experimentally pulmonary and intestinal lesions may be produced *ad libitum* in swine plague as well as in hog cholera.

If so we must admit that the pathologic anatomy in a great number of cases does not allow of a differentiation between the two affections; Voges and others, were mistaken, on the other hand in asserting that the causative micro-organism was the same in both diseases. The erroneousness of this assertion has indisputably been brought out by Salmon, Smith, Billings, Welch and Clement, and the finishing touch to its refutation has been added by Hueppe * in his investigations on the hæmorrhagic septicæmia.

According to these investigations the swine plague, bacillus, on the one side, and the hog cholera bacillus on the other are well established and accurately defined as to their morphologic and physiologic characteristics. Without mentioning minor traits, it is above all the motility (presence of flagella) of the hog cholera bacillus that absolutely separates it from the organism of the swine plague. Hog cholera bacilli, furthermore, never form phenol or indol in pepton solutions, but they cause milk to assume an alkaline reaction, and to slightly gelatinize. The bacilli of swine plague (Schweineseuche-Schuetz) are always immotile. They form in peptonized fluids, phenol and indol and produce in milk a very decided sour reaction. In these two latter characteristics they resemble the micro-organisms of the swine plague of Marseilles (Rietsch and Joubert),† which, however, are very actively motile, like hog cholera bacilli.

* Berliner klin. Wochenschr., 1886, No. 44.

† Comptes Rendus de l'Académie de Science 106.

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The characteristics mentioned are perhaps the most prominent ones, but they do not stand alone, and together with many others which it would take too much time here to mention, have established beyond a dispute the autonomy of the specific micro-organisms in the pathologic affections under discussion. But we would be wrong in concluding, that now the differentiation between the latter by means of a bacteriologic examination had been made an easy task. The researches of Welch and Clement * have taught us that very often in hog cholera (intestinal form) a secondary pulmonary infection by swine plague bacilli supervenes, completing the picture of pneumo-enteritis.

What is more perplexing still, Smith has demonstrated the fact that in the bronchial tubes of normal hogs, there are always present certain swine plague-like bacilli of little pathogenic power, which under the weakened condition of the organism produced by a hog cholera attack, assume a higher virulence, entering the lungs and setting up the pulmonary complication.

This embarrassing multitude of militating factors is made more perspicuous by the fact that all of the affections mentioned either appear in an acute form or take a more or less chronic course. It was indispensable to deal with them here shortly in order to show to which degree difficulties surround the practical administration of an etiologic therapy.

Considering the vast losses caused by hog cholera, the promising task of immunizing or of curing animals by means of such an etiologic therapy have been very numerous. Already, in 1886, Salmon and Smith succeeded in immunizing smaller animals by the administration of germ free culture-fluids, and Schweinitz claimed to have achieved the same object by certain substances, which he prepared from pure cultures, and which he called "sucholotoxin" and "sucholoalbumin." For the immunization of hogs the most diversified methods have been employed, blood of diseased animals, dead or attenuated cultures, etc., being used as vaccine. But none of these methods have as yet scored a final success; some of them, especially the intravenous injections, had

* Baumgarten's Jahresber. 1893, p. 135.

to be abandoned as decidedly dangerous. I need not enlarge on them in this paper, because they are well-known things to my readers.

The reasons why these attempts as well as some others to establish passive immunity by injection of serum of immunized animals, have failed are to be looked for in several directions. In the first place quite a number of investigators have conducted their experiments with germs that were not hog cholera germs at all; I already mentioned Metschnikoff as laboring under such a *quid pro quo*, and it seems that Selander too has fallen a victim to the very same error. Certainly a great many failures in this country are due to it. In the second place, very often the biologic qualities of the material (cultures) used were such as to make the possibility of a success questionable from the beginning; one peculiarity of the hog cholera bacillus is to rapidly lose its pathologic character and virulence, and to become an almost harmless parasite. On the other side, an increase of this virulence is very difficult to obtain. That a great number of investigators have experimented with a bacillus of very low virulence is shown by the large doses used, by the protracted course of the disease in the animals experimented upon, and finally by the relative insusceptibility of some animals (chickens) for these bacilli.

I began my experiments with a hog cholera culture which I owe to the kindness of Dr. Welch. When I attempted to determine its virulence I found that, a suspension of 3 mg. of a 48 hours agar culture in physiologic salt solution, subcutaneously injected was necessary in order to kill a 1500- to 2000-gramme rabbit in from 6 to 8 days. To kill guinea-pigs I had to use much larger doses. My first efforts, therefore, were directed towards an increase of this virulence. The usual methods did not achieve this aim to any appreciable extent. After long experimenting I succeeded, at last, by injecting a large dose of fresh culture (suspension made with normal salt solution) into the abdominal cavity; after death one c. c. of the peritoneal exudate was administered intraperitoneally to another rabbit,

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and so on, until a passage through 11 animals had been reached; the amount injected into the last 4 animals was gradually diminished, so that rabbit No. 11 received only .10 c. c. The animals were as near as possible all of the same size and breed, and all of them were males; they weighed from 1600 to 2200 grammes.

In the course of this series the time elapsing between injection and death grew shorter and shorter, so that the last rabbit died 48 hours after inoculation. From the spleen of this rabbit pure cultures were obtained, and .5 mg. of a 48-hours agar culture of this material proved now to be sufficient to kill, when subcutaneously administered, a medium-sized rabbit within 48 hours. The same amount was needed to kill a 400-gramme guinea-pig in about the same time. The lesions produced in both kinds of animals were those typical to this infection, and which have been described by many authors. I must mention, however, that while the less virulent races produced an abscess at the site of the injection, I never observed any local reaction with the more virulent ones. By an occasional passage through a rabbit it was easy to maintain this degree of virulence.

I have no doubt that it would have been an easy task to, in the way described, increase the virulence beyond the point reached by me; from what Voges says, I must infer that he has arrived at higher degrees. But I concluded not to exaggerate this rabbit—or guinea-pig—virulence, because it was easily possible that it was only one-sided, and had no bearing on the behavior of the bacilli towards hogs.

When smaller doses than .5 mg. were injected, the animals mostly recovered after a protracted illness. The blood serum of such animals had a very decided agglutinating power on the bacilli, a phenomenon that has already been described by Cashin * and others. In some cases this power was apparent at a dilution of 1 to 120. I mention this fact here because from it the conclusion has been drawn, that like in typhoid fever no antitoxic substances were formed in the blood of animals recov

* New York Medical Journal, 1897.

ered from the disease. How far this assertion is correct we will see later.

Having convinced myself from a thorough study of the experiments of other observers, that an active immunization upon a large scale was, if not impossible, certainly impracticable, I endeavored to establish passive immunity by means of the serum of animals immunized against my virulent bacilli. But the main question to solve was: To what degree is hog cholera a toxic disease?

If hog cholera bacilli in suspension, that have been killed by being heated for one hour to 60° C., are injected into the abdominal cavity of a rabbit, the animal dies in a short time from a purulent peritonitis; the exudate is always found to be perfectly sterile, in cover glass specimens, no remnants of bacilli can be found. On the other hand, if hog cholera bacilli are extracted for several days with a slightly alkaline salt solution, separated from the latter by filtration and again suspended in water, they now, when injected into an animal (rabbit) like before, cause only a very slight disturbance. The filtrate, however, subcutaneously administered after being neutralized with acetic acid, proves to be exceedingly toxic.

Finally, if very virulent hog cholera bacilli are grown in peptone bouillon for about a week, the culture fluid passed through a porcelain filter is comparatively harmless, large doses being required to bring about any effects in animals treated with it.

From these three experiments we gather the information, that our bacilli, though producing a powerful toxine (or several toxines) do not excrete it (or them) into the culture medium. The latter only becomes charged with it (or with them) corresponding to the number of bacilli dying and decaying. In accordance with this assertion experience teaches us that the older the bouillon cultures, the more toxic they become; in fact, the filtrate of a culture that has been kept for six weeks in an incubator at 37° C. is so poisonous in its effect, that a few tenths of a c. c. are sufficient to kill rabbits and guinea-pigs in a short

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time. That such a poison, or a similar one, at least is present in the organs of animals dead from hog cholera infection, is easily shown by grinding up their spleen, and extracting it with a ten per cent. glycerine solution; the resulting fluid is of a fairly high toxic potency, as shown in the animal experiment.

There is no doubt, in my mind, that these facts reinforce the toxic theory; the individual case may, of course, offer predominating the clinical picture of septicæmia.

That it is an easy thing by means of cultures and culture products to immunize small animals, has already been shown by Salmon. But nobody as yet has shown, that the blood of such animals has protective or curative properties. Perhaps this is due to the fact that it is very difficult, in rabbits at least, to establish a tolerance for high doses of the living bacillus. They, too, are very susceptible for its poisonous products; continued injections produce some kind of a maranthic condition in them which it is impossible to overcome.

Even in higher animals this is the imminent danger, and great care must be exercised in the dosage and increase of the injections. For my experiments I used a donkey and horses. The former had soon to be rejected on account of nasty and deep-seated abscesses which regularly formed after each injection, and greatly helped to reduce its physical strength.

On the horses, too, the treatment had an exhaustive tendency. I began with a small dose (1 c. c.) of toxin (filtered 6 weeks culture) given hypodermically, and increased it in the course of 3 months until 500 c. c. were given at one injection. The injections were given about every week. The reactions were quite severe, general as well as local. The fever ran up to 104° and $104\frac{1}{2}^{\circ}$ F. for several days, and at the site of the injections enormous œdema and gelatinous infiltrations formed. It was peculiar that the latter did not grow less as the treatment progressed. After these high toxin doses had been reached, living 48-hours old cultures were injected, and up to 200 c. c. were given. In contradistinction to non-treated animals, these cultures were borne nicely, and did not produce any abscesses. The

first blood was drawn after such a treatment that had lasted for four months. The serum separated out nicely and was preserved by means of pieces of camphor.

For the future I shall follow the method of Huber and Blumenthal* (mixing the freshly drawn blood with an equal amount of salt solution, thorough shaking, addition of 1 per cent. of chloroform, and filtration after 24 hours). While thus the antitoxic potency is the same as in serum prepared after the ordinary method, the output is twice as large.

With appropriate methods it can be shown that this serum possesses bactericidal and antitoxic properties. It neutralizes comparatively large amounts of toxin, and effectively protects animals against infection. .10 c. c. is sufficient to counteract inoculation with a fatal dose of living bacilli in a rabbit, while it takes a little more to protect a guinea-pig.

.5 c. c. when injected not later than 24 hours after inoculation with the fatal dose cures a rabbit in most cases, but not with absolute certainty. It seems that individual rabbits are much more susceptible than others, so I tried to use animals as far as possible of the same size, sex, and breed. Larger amounts of serum were not tried on these animals for practical reasons.

Serum treatment was unsuccessful in all cases, where the time between infection and beginning of the treatment exceeded 36 hours (in rabbits).

A more accurate series of experiments were conducted on a number of young hogs. Three of them were injected with varying amounts of serum, and one, three, and fourteen days, respectively, afterwards injected intravenously with twice the fatal dose of a virulent culture. All of the animals remained healthy and undisturbed. A fourth animal that had not been treated developed promptly on injection of the bacilli a typical case of hog cholera. This experiment was repeated several times with the same results. It was found that one part of the serum, as it is now, protects 16,000 parts of hog, so that for a medium-sized animal a quantity of 5 c. c. about would be necessary for a pro-

* Berl. klin. Wochenschr., Aug. 2, 1897.

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phylactic inoculation. In one case I succeeded in curing a hog which was not yet far advanced in the disease by three successive injections of 5 c. c. each. I cannot, however, yet consider my observations on this side of the question as complete. It is possible that by preparing a virus of higher potency than the one employed by me, and perhaps by pursuing the treatment of the horses for a longer time, the serum may be improved considerably. As it is, it has very decided advantages over any other method of treatment in this dreaded disease; further observations will show how far its value goes.

In concluding this article I must refer back to my remarks on the etiology of hog cholera. Our serum will only benefit cases infested by the bacillus suispestifer, the hog cholera bacillus proper. The diagnosis ought, therefore, be made in every case with the utmost care and precaution.

METHODS OF MEAT INSPECTION.

BY LEONARD PEARSON, B. S., V. M. D., VETERINARY DEPARTMENT, UNIVERSITY OF PENNSYLVANIA.

A Paper read before the November Meeting of the Keystone Veterinary Medical Association.

It is not necessary to submit to this audience any argument to prove the importance of meat as an article of diet. This is a matter that is so thoroughly understood and universally recognized that it may be accepted as axiomatic that meat is not only essential as food but that the activity of a people is indicated largely by the amount of flesh consumed. In 1890 the British Government published a table showing the amount of meat used in the different civilized lands. This table supports the statement just made. The amounts consumed per capita and per annum are as follows:

Australia, . . .	111.6 kg.	Belgium and Holland, 31.3 kg.
United States, . .	54.4 kg.	Austria and Hungary, 29.0 kg.
Great Britain, . .	47.6 kg.	Russia, 21.8 kg.
Sweden and Norway, 39.5 kg.		Spain, 22.2 kg.
France, 33.6 kg.		Italy, 10.4 kg.
Germany, 31.6 kg.		

It will be seen that the amount consumed in the United States is greater than in any other part of the world with the exception of Australia, where meat is so very cheap that only the more desirable portions are used as food, and the actual consumption is less than the figures indicate.

Since flesh enters so largely into our diet, and since it is derived from animals that undergo the same disease processes that we do, and is composed of such fragile compounds that it takes on irritant and toxic properties very quickly, unless handled with the greatest care, it is not surprising to learn that the control of this food has attracted the attention of sanitarians from the earliest times. The first meat inspection was under the control of ecclesiastical authorities, and in some orders, as the Mohammedans and Jews, it is carried out under the same direction to this day. Such an inspection when originated was as careful and thorough as the knowledge of the times would permit, but the regulations under which it is now enforced do not represent the most useful and efficient methods.

In the last century the general public was aroused, and many of the countries of Continental Europe passed laws providing for the inspection of meat, and some municipalities erected abattoirs where all of the slaughtering of the city should be carried on under competent supervision. More recently, since the bacterial origin of many diseases has been demonstrated, and the close relationship of many of the diseases of man and animals have been established, the importance of rational meat inspection has been greatly emphasized. At this time, all of the countries of Continental Europe and the British Isles have a system of meat inspection which, although incomplete in some places and in some details, is in the main sufficient to protect the consumer from the numerous maladies that may be contracted by eating the flesh of diseased animals or meat that has been improperly cared for or preserved.

The system of meat inspection that has proven most satisfactory in Europe, includes the establishment of a municipal abattoir under the direction of a veterinarian trained in meat inspection

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and it is provided that all animals killed locally shall be slaughtered in this establishment. All meat-producing animals are examined while living and after they are killed. Both inspections are made because there are some conditions that can not well be detected after the animal is slaughtered, but often have an important effect on the quality of the meat, as fever, fatigue, exhaustion, starvation, and excitement. After an animal is slaughtered, its organs and flesh are examined for evidences of disease that are directly transmissible to the consumer; parasites that may be injurious, and other conditions which, while not directly transmissible in themselves, render the flesh indigestible or toxic, and thus produce digestive disturbances or more severe disease. The carcass is also examined for the purpose of discovering conditions that render the meat innutritious or offensive, such as chronic wasting diseases, emaciation, old age, immaturity, and advanced pregnancy. Moreover, the method of slaughtering and handling the dressed meat is supervised, and it is seen to that all of the steps are carried out in a cleanly manner, and that the meat is not necessarily contaminated by carelessness and filthy surroundings. The conditions and diseases to be sought for and avoided are so numerous that they cannot be discussed at greater length in this paper.

Germany has more than six hundred slaughter-houses belonging to municipalities; each of these is under the direction of a veterinarian. In most of them there are separate halls for slaughtering the different kinds of meat-producing animals; one each for cattle, sheep, and swine. The butchers in these cities pay a reasonable rental and are permitted to use all of the facilities provided, and to enjoy the advantages of buildings equipped with all possible labor-saving devices and modern conveniences. Each slaughter-house has a large cold storage chamber, which can be used by the individual butchers upon the payment of a small fee. In this way the butchers who kill but a few animals a week, and cannot afford to equip satisfactory establishments of their own, receive all of the benefits enjoyed by those who conduct large businesses. Moreover, their

meat goes on the market with the official stamp of the inspector, showing that it is wholesome. The meat that is condemned is made into fertilizer by the establishment, on the account of the individual butcher, and this part of the business is conducted so well that it is usually possible to realize from twenty to twenty-five per cent. of the original cost of the animal. This saving cannot be effected under less favorable conditions.

In this country, the existing systems of meat inspection may be divided into two classes, national and local. For some years the United States Bureau of Animal Industry has conducted a constantly improving meat inspection service, that now extends to animals killed for export and for interstate trade in the principal meat-packing centres of the country. The work is performed by veterinarians, who examine all carcasses, stamp those that are sound, and condemn those that are unfit for food. There is also a microscopical examination of pork for the detection of trichinæ, but this extends only to the products prepared for export. Some of the cities in the United States have also organized more or less complete meat inspection systems. The system in New Orleans, originated and developed principally by Dr. A. S. Wheeler, is perhaps as perfect as exists anywhere in the United States. It provides that all animals killed locally for food shall be inspected and the meat is stamped. Moreover, all dressed meat brought into the city must be stamped in a similar way. And it is unlawful for any butcher to sell meat that does not bear the stamp of the meat inspector. In Montgomery, all meat-producing animals are killed in a central slaughter-house under the supervision of a meat inspector. These systems, and all that are followed in European countries, place the responsibility of deciding whether a given carcass is suitable for food upon an inspector who is trained in animal pathology.

In some other cities, as Philadelphia, the meat inspection system is based upon an entirely different principle. There are laws prohibiting the sale of diseased or unwholesome meat, and it is assumed that the butcher is always competent to determine

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this point. Under this system detectives or police officers are appointed to visit slaughter-houses, markets and butcher shops, hunt for diseased or unwholesome meat, which is condemned by a veterinary adviser called in by them, and the seller is often prosecuted. It is scarcely necessary to say that this system is undesirable: First, because it does not include an inspection of all meat sold and inevitably permits the consumption of much that is injurious, and, second, because it assumes knowledge on the part of the butcher that he cannot possibly possess and makes him responsible for conditions that he cannot recognize. The system is therefore incomplete and as a permanent system it is unjust. Its chief advantage lies in the fact that it tends to make butchers more careful, so that gross pathological conditions do not reach their stalls, and a portion of the diseased meat that would otherwise be placed upon the market is barred. However, such a system constitutes a beginning in the right direction, but no municipality should be satisfied with it, if a better can be obtained.

Municipal meat inspection is of more importance in the East than in the West, because tuberculosis is more prevalent in this region, and a great many worn-out dairy cows are sent to the shambles. Many of these cattle are afflicted with tuberculosis and other chronic ailments. They are frequently emaciated and constitute the most dangerous class of beef animals. Philadelphia is situated in the midst of a bountiful dairy district and is a large consumer of these animals. They are not killed in a large central abattoir under constant supervision, but in numerous little slaughter-houses scattered throughout the city and its suburbs. There are about one hundred slaughter-houses in Philadelphia. Many of them are quite small, situated on back streets, surrounded by stables and dwelling houses. In these establishments cattle are frequently killed at night or very early in the morning, and are not inspected at all. Occasionally, and as often as possible, the inspector drops in while the carcasses are being dressed, and his vigilance is rewarded almost daily by the discovery of a diseased and dangerous animal. The busi-

ness of these slaughter-houses is conducted so irregularly that it is not possible to properly control them without having almost as many meat inspectors as slaughter-houses, and if the force were enlarged to these dimensions the sanitary conditions and the surroundings of the slaughter-houses would still be such as to seriously injure the wholesomeness and keeping qualities of much of the meat dressed in them.

A further reason for a better system of meat inspection here is that there is a constant and growing demand for many parts of carcasses which are more frequently diseased than the flesh, and were formerly thrown away. Our ever-increasing foreign population consumes viscera for which there was no market a few years ago, and meat inspectors frequently find that such organs are diseased to an extent that renders them unwholesome, while the rest of the carcass can safely be sold. As a result of the fact that inspectors are not constantly present, a great many diseased carcasses are unquestionably sold and frequently without the knowledge of the butcher who handles them. His training is not sufficient to enable him to detect important symptoms and lesions. In some cases, however, he does detect them and remove them so thoroughly that the suspicions of the meat inspector are not aroused.

The conditions that prevail in Philadelphia are not unique. They exist in almost every city in this country, and it is largely on account of the multiplicity of slaughter-houses that thorough systems of meat inspections have not been more generally established. An adequate control of the meat supply of Philadelphia cannot be enforced without a great extension of the present force, or a concentration of the business of slaughtering. The latter plan is supported by the experience of all of the older civilized countries, and is to be recommended not only because it would facilitate the inspection of meat, but for several other reasons as well. It would do away with all of the small, poorly equipped, badly managed slaughter-houses which are in many cases nuisances in their respective neighborhoods. It would make it unnecessary to drive cattle through the streets, a prac-

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tice that blocks traffic, frightens people and at times occasions serious accidents. It would give small butchers the advantages enjoyed by wholesalers; they could use the facilities of the large slaughter-house, which are immeasurably superior to their individual establishments, and the cold storage system could be used by all with economy to the dealer, and advantage, and increased wholesomeness of the meat, to the consumer. The offal and the condemned organs and carcasses could be disposed of to better advantage. Local meat would gain in reputation, if such a system were enforced, and trade could be built up on its merits and competition with Western beef would be less difficult.

Moreover, it has been shown by repeated trials of this system that instead of increasing the cost of meat it tends to reduce it.

A large establishment can be conducted by coöperation between butchers at less expense than when each has his own establishment. In Europe such union or central abattoirs are owned by municipalities, and undoubtedly this is the most desirable system, because under it all butchers are assured equal rights and privileges. It has been found that the rentals derived from these establishments are sufficient not only to pay the running expenses, but to afford a reasonable return for the investment. The whole system is not only of great advantage to the consumer of meats, but it subjects butchers to no hardship whatever, and makes it more convenient and cheaper for them to conduct their trade.

MILK INSPECTION.

BY JAMES HENDERSON, M. R. C. V. S., CHICAGO, ILL.

Read at the Meeting of the Illinois State Veterinary Medical Association and the Chicago Veterinary Society, at the Sherman House, Chicago, Nov. 3, 1897.

Mr. Chairman and Gentlemen:

In accordance with the invitation of our President, the following remarks will refer to the subject of milk inspection.

The objects aimed at by milk inspection are:

I.—To secure to the consumer a fair and uniform standard of quality.

2.—To secure the consumer against diseases which may be transmitted to them by the medium of milk.

In this city there exists a system of inspection carried out by an organized staff of officers to secure to the public a good and uniform standard of quality. This form of inspection is, I believe, well administered. Still, there is one just ground for criticism here. I refer to milk obtained by feeding brewer's grains and other waste products of distilleries and vinegar factories.

It seems that by feeding this slop milk can be obtained which will reach the necessary standard of quality. The following passage on the subject appears in the annual "Report of the St. Louis Milk Inspector, 1896:"

"Of the milk producing property of such food there appears to be little doubt, and as producers of quantity alone our dairymen have the weight of evidence in their favor. Authorities, however, who have more thoroughly investigated this subject assert that the quality of the milk produced under such feeding is less stable in its constituents, the fat more readily broken up into the various fatty acids, the casein less soluble, the whole product more liable to the various forms of decomposition, and less valuable as a nutrient than milk produced by healthy animals under natural environments. Such milk cannot be used by the manufacturers of condensed milk, and in their contracts with producers of raw milk specially stipulate that the cows should not be fed upon it in any quantity whatever."

I venture to think that the sale of such milk should be stopped. It is an injustice to citizens to have such products foisted upon them simply because such slops are cheap.

This form of inspection is too purely mechanical and chemical to sustain our interest, so we will pass to the second subject of inspection, namely, the securing the consumer from infectious diseases transmitted by milk, in which we as veterinarians are more directly interested. Such infections may be very naturally classified as those which are primary and those which are secondary.

The infection may be said to be primary when the milk ac-

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quires the virus directly from the cow while she is suffering from some specific disease which is transmissible to man, such as anthrax, foot-and-mouth disease, tuberculosis, etc.

Secondary infection occurs when disease is imparted into milk which is otherwise healthy by outside causes, as, for instance, by washing milk utensils with disease-contaminated water or the absorption of the volatile virus of disease from which one of the employees may be suffering. To such causes may be traced many outbreaks of such diseases as scarlet fever, typhoid, diphtheria and even cholera. The report already quoted from gives a list of outbreaks of these and similar diseases in different parts of the world which were directly traceable to the dairies where employees or members of the dairyman's family were affected by these diseases.

As far as I am aware nothing has ever been done in this country to combat this peril to the community by specific inspection. In Edinburgh, Scotland, however, this form of inspection has been partially established. An outline of its methods may offer some valuable suggestions for us. In that city a special health officer has charge of the inspection. Whenever it shall be certified by this medical officer of health that an outbreak of infectious disease is, in his opinion, attributable to the milk supply, the dealers whose milk is suspected are ordered by the city authorities to render them a complete list of their customers with their addresses.

The dealers in question are also obliged to give the names and addresses of all the farmers and dairymen from whom they buy their milk. By means of the list of the consumers the progress of the disease is noted as to location among these customers, and the offending dealer or dealers are thus traced out. By means of the list of dairymen supplying these dealers, the offending *dairy* is traced out. At such dairy it is usually found that some employee or member of the dairyman's family is suffering from the disease in question. The sale of milk produced at this place is prohibited, and this prohibition is maintained until the affected person is removed from the premises,

and until disinfection has been enforced to the satisfaction of the said health officer. After these measures have been taken, the sale of milk may be resumed. This is a mere outline of the regulations, but when their salient points are considered the plan is very practical if it is a little cumbrous. In order to get into more immediate touch with the producers whose milk may be contaminated in this way, it would be necessary to have all milk producers licensed, and a provision made which would force them under severe penalties to report all suspicious cases of illness among the operatives of the establishment to a properly constituted medical inspector. Even this plan has its serious disadvantages, for if the disease so reported should be an infectious one it would inflict a great though temporary loss upon the producer, and it does not take a very deep insight into human nature to see that the producers, or many of them at least, would resort to every subterfuge in order to avoid making such a report.

The alternate plan to the above one is, to have these licensed dairies visited every week by an appointed health officer, whose duty it would be to report and to act upon such cases. It might be possible to enforce both of these plans of inspection at one and the same time.

The above remarks, let me remind you, refer to inspection as applied to *secondary* affection. We will now return to the consideration of inspection as applied to *primary* infection of milk. If you will pardon the repetition, I will restate that primary infection means the transmission to man through the vehicle of milk of diseases which are common both to man and the lower animals. Of all the primary infections beyond comparison tuberculosis transcends the others in importance because it is so common and so deadly. It is estimated that about 14 per cent. of our population die of this disease. A study of the results of tubercular tests will show that about the same proportion of cows are similarly affected. The saddest part of this record of fatality is the fact that out of the 14 per cent. of human deaths from this cause a relatively large proportion of them are infants.

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In children this disease for the most part takes the form of tabies mesenterica, and this alone, if no other evidence existed, is enough to point to milk as a source of infection. Microscopic examination of milk with a view to demonstrating the existence of the bacillus tuberculosis in it is quite impracticable because of the amount of their dilution. But their presence in affected milk has often been demonstrated by the injection of it into the subcutaneous tissue or into the peritoneum of guinea-pigs and other susceptible animals. When the milk is drawn from affected udders for such injection, the disease is reproduced in these animals nearly every time. Authorities differ regarding the nocuity of milk drawn from admittedly tuberculous cows but whose udders are not invaded by the disease. Some scientists by injecting such milk into experimental animals have had positive results, but in most cases the results have been negative. The fact that a proportion of these experiments show positive results, together with the fact that milk taken from affected udders give positive results almost invariably, furnish an indisputable basis for the conclusion that the average milk supply contains sufficient tubercle bacilli or spores to infect susceptible human subjects. This being the case it is imperative that the body politic defend itself against this danger by a system of milk inspection. Fortunately for this purpose we have an unerring diagnostic agent in Koch's tuberculin. Of the known results of this test and of the method of its application I need say nothing here, they are already so well known.

In this State, up to the present time, the attempts to apply this test have been isolated, and inconclusive, simply because they have been unorganized. We are far behind some of our neighboring states. Of the Western States, Minnesota is far in the lead, and as a city Minneapolis has attained a state of inspection that is close to ideal, at least in theory. As an incentive to our agitation for a similar arrangement in Chicago, I will, with your permission, read some passages from Bulletin No. 51 of the Agricultural Experiment Station of Minnesota.

Page 350. "Minneapolis has taken a creditable stand in this

matter. The city furnishes tuberculin free and a competent veterinarian to do the work. No man can legally sell milk without a license, and a certificate of tuberculin test must be presented before a license may be granted. All cattle tested are tagged and numbered, both those that react and those that do not. Record is kept of these numbers and the disposition of the cattle is tested and numbered.

"The general law and the city ordinance which provides for the inspection of dairies, dairy herds, and the licensing of the same is so admirable that it is here given, with the suggestion that other cities shall go and do likewise. It will be noticed that the city does not order any cattle tested, but merely says if your cattle are not tested we cannot grant you license to sell.

"Section 1.—No person shall sell any milk within the city of Minneapolis without first having obtained a license so to do in the manner hereinafter provided."

In section 3, while providing for the dairyman's license, the following occurs :

"Upon the filing of such application with the Commissioner of Health for said city, as provided in the preceding section, the Commissioner of Health, or the veterinarian of the Department of Health, or an authorized inspector of said Department of Health, shall inspect the dairy and dairy herds of such applicant or the dairy and dairy herds of the person from whom such person obtains his milk for sale within said city, without unnecessary delay, and it shall be the duty of the Commissioner of Health to cause to be made by the veterinarian of the Department of Health, or under his direction and supervision, an examination of each and every animal producing milk for sale or consumption within said city or belonging to or controlled by said applicant or the person from whom said applicant obtains his milk, for detecting the presence or absence of tuberculosis, or any other contagious or infectious disease, and the said veterinarian of the Department of Health, in making such an inspection and examination is hereby authorized to use what is commonly known as the tuberculin test as a diagnostic agent for

the detection of tuberculosis before presentation of a license, every animal tested as to the result of the tuberculin test.

These provisions are given and Minneapolis has carried them through. These regulations are not perfect but it is better to have them than to have no regulations. The veterinarian of the city office is authorized to enforce the regulations which require the testing of the cattle. He is a practical veterinarian. Although he is not a specialist in such matters, he would surely detect the tuberculosis. He would be able to detect typhoid, the primary disease of the dairyman. He is a veterinarian who works in the city and is not a theoretical veterinarian. Nothing is necessary to come, had the milk dealer

the detection of tuberculosis in such animal. After such examination and inspection of the dairies and dairy herds as hereinbefore provided, the Department of Health shall tag each and every animal so examined, which tag shall be of such a character as to afford a permanent record of such examination, and the result of the same as regards the presence or absence of an infectious or contagious disease."

These regulations here outlined are entirely praiseworthy, and Minneapolis is to be congratulated upon their passage through the city council. I have no information as to how these regulations have stood the test of being put into practice, but it is safe to conclude that the men who were shrewd enough to devise this scheme would not lack ability to put it into execution. Observe that this enterprising young city has a veterinarian of the Health Department. The creation of such an office is just what we want in this city. It would be his duty to enforce good laws, which already form part of the city code, but which remain a dead letter, because no one is appointed to enforce them. He would have under his care the horses belonging to the city fire and police departments. But, most important of all, he could organize a system of milk inspection which would practically eliminate tuberculous milk from the city's supply. Although Illinois is preëminently the State which should lead in such matters, it would be very much to her advantage if she would simply copy her Northwestern neighbor, at least so far as the tuberculin test is concerned. No system of milk inspection would be complete which did not protect the consumer against typhoid, diphtheria, etc., as well as against tubercle and other primary infections. The first is medical in its scope, the second is veterinary, but there is no good reason why they should not work in harmony. If the license to sell milk be made conditional upon possession of a certificate of veterinary inspection, nothing would be simpler than to make an additional certificate necessary proving that the premises from which the milk had come, had also been subjected to a medical inspection. The milk dealers might look upon this as the last straw that broke

the camel's back, but if it were found necessary the benefited public might not be unwilling to pay a slightly advanced price for what would be a vastly improved product.

Let me remind you that the innocuous milk does not mean milk which is entirely free from bacteria. Many observers have proved that milk has, as Dr. Moore says, its "natural bacterial flora."

It appears that the milk first drawn from one quarter of a cow's udder contains about 90,000 bacteria to the c. c.

That of the middle milking contains 9000 per c. c., while that of the last milking may contain about 500 per c. c., or may be free of them altogether.

Dr. Moore in the 12th and 13th annual report of the Bureau of Animal Industry for 1895-96 summarizes their nature as follows:

"The bacteria which become localized in the milk ducts, and which are necessarily carried into the milk, are for the greater part rapidly acid-producing organisms, *i. e.*, they ferment milk sugar, forming acids. They do not produce gas. *Bacillus coli communis* and other gas producing bacteria sometimes found in the market milk are presumably the result of external contamination. The fact that sugar fermenting bacteria are ordinarily present in freshly drawn milk renders it necessary if its normal composition is to be retained, that it should be pasteurized as soon as possible after it is drawn. This is necessary, regardless of the cleanliness of the stable, milking utensils, and surroundings generally. Much of the reported intestinal troubles arising from feeding infants ordinarily pasteurized milk is undoubtedly due to the presence of acids produced before the pasteurization by sugar fermenting bacteria derived from the milk ducts. These germs in themselves are non-pathogenic. They are only nocuous, inasmuch as they decompose the solids of the milk. They have therefore only to be considered as regards the preservation of the milk. Their multiplication and specific action can be checked by rapidly cooling the milk to 40 or 50 Fahr., as soon as it is drawn, for the gradually cooling milk

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forms a medium that is very favorable to their vegetation. Unfortunately there is still another set of germs to be reckoned with. I refer to those which gain access to the milk after it is drawn from the cow. Most of these fall from the body of the cow into the milk during the act of milking. The others are those which infect cow sheds, milk utensils, and milk houses habitually. Their action may be summarized under these heads:

"1. Those which make milk, and still more cream, ropy or stringy.

"2. Those which produce gases in the milk, the gases appearing as bubbles on the surface.

"3. Those which cause a change of color in the milk, the commonest tints being red and blue."

Complete avoidance of this species of contamination is difficult to attain, yet it is more easily avoided than either of the others, that is the disease germs and the germs native to the milk. The most rigid insistence upon cleanliness and constant disinfection will do much to remedy this evil. An excellent set of rules bearing on this subject are set forth in Bulletin No. 3 on "Milk," by A. G. McClatchie, of the Agricultural Experiment Station, Los Angeles, dated Aug., 1897. Time will not permit of their insertion in this paper.

This completes the long list of microbic milk contaminations. Milk is the most extensively infected of all our common foods. The reason of this is that it forms such an excellent medium for the multiplication and preservation of microbes. They find nourishment in it just as we do. The problem now before us is, how to free the milk from bacteria and their spores, and at the same time conserve its nourishing and easily assimilative properties. In the first place the animal heat must be got rid of at once. Keeping the milk in motion retards microbic germination, and rapid lowering of the temperature to 40 or 50 Fahr., will check it, but will not affect the spores. The most perfect device for this purpose would be one by which the milk was kept running over an ice cold surface until that

temperature was reached. This, of course, should be done as soon as possible after the milk is drawn from the cow. All the mischief possible would be done by postponing it for six hours. Treatment of milk to this extent is about all that could be accomplished at the average dairy. For subsequent treatment the methods in force at the milk laboratories of Nathan Straus in New York are very effective.

As soon as the milk arrives at his depot its temperature is reduced to 50 Fahr. It is then run through a Laval separator, which throws out all the dirt, animal cells, and mucous held in suspension.

These impurities are then removed and the milk and cream are mixed together again. The milk is then bottled and pasteurized by exposure to heat, the temperature being 75 C. or 167 Fahr. The milk is then rapidly cooled and kept cool until distribution. This method of preparing an improved quality of milk is very good as far as it goes, and incidentally let us pay our tribute of admiration to this genuine philanthropist, who, at a financial loss to himself, supplied this milk to the poor of certain districts about New York at a very low price. This method of treatment is probably the best of its kind that has been operated on a large scale, and may be considered as typical of all others. It is open, however, to two important criticisms.

In the first place, heat at 167 Fahr. coagulates the albumen of the milk, and this very seriously interferes with its assimilation by infants. A well-founded prejudice against pasteurized milk is growing up among medical practitioners. A physician remarked to me the other day that a child may just as well die of tuberculosis as of indigestion. The other criticism of the method is, that pasteurized milk is not sterile, although its keeping qualities are immensely improved. The microbes that are in the vegetative stage are killed by this process, but the spores, which are the latent or seed stage of them, can withstand the exposure to this heat (167 Fahr.) for the few minutes it takes to pasteurize milk, without being injured. The presence of these spores makes it necessary to reduce the temperature again rap-

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idly so that as few of them may be allowed to germinate as possible. It thus appears that pasteurization as at present operated does not succeed in conserving the natural assimilative properties of raw milk, because the high temperature used imparts a cooked taste and coagulates the albumen. It also fails to produce sterilization. The difficulty is to find a temperature low enough to avoid these chemical changes and yet high enough to produce sterilization. The microbes which present the most difficulty on account of their vitality are the bacilli and spores of tuberculosis and the spores of the microbes producing souring in milk. Mr. Russel, of the Wisconsin Agricultural Experiment Station, strikes the key-note of the new treatment in his milk Bulletin No. 44.

He writes: "It is possible, however, by the *intermittent* application of heat at successive intervals either at a comparatively low temperature, say 140 Fahr., or higher, to kill out completely *all* living germs either in a latent or in a growing condition. This method can be used with milk, but it would enhance the cost of preparation so much that it is not applicable to its preservation under ordinary conditions."

The first of these successive heatings would kill all the vegetative germs, leaving only the spores. If the milk be allowed gradually to cool, these spores will find a temperature at which they will germinate and assume the vegetative stage. The spores would be then turned into bacilli, and a second heating will kill them. To make sure that no spores remain after this treatment, a third heating is made, which leaves the milk absolutely sterile. Of the two offending bacilli that of tuberculosis is by far the most important. Mr. Russel further states that it is killed by exposing it to 149 Fahr. for thirty minutes, so it is easy to determine a thermo death point *below* that at which the chemical changes take place. This method of treating milk is the most perfect yet discovered, but it is unfortunate that it is so costly. Still, the application of it is a matter of such supreme importance to the public health that if the highest mechanical skill were employed the expense of

it might be reduced so as to bring the product within the reach of all. The greatest barrier is the length of time necessary for the operation.

In conclusion I will again quote from Mr. Russel:

"It should be constantly kept in mind that the pasteurizing process is no cure-all for dirty and filthy conditions, and does not put a premium upon slovenliness. It is a mistaken idea that one can take tainted, half-soured milk, and by pasteurizing it, preserve it for a long period of time. The best results with the pasteurized products will be secured by those who take the greatest pains in securing the very best milk they can get. If we have first-class raw material to work with, by care and patience, no trouble will be experienced in getting a product that will be satisfactory under the most critical tests."

A CONTRIBUTION TO THE SYMPTOMATOLOGY OF RUPTURE OF THE DIAPHRAGM.

By W. A. HECK, D. V. M., KANSAS CITY, MO.

A Paper read before the Missouri Valley Veterinary Medical Association.

In February of this year my attention was called to a ten-year-old bay mare, about sixteen hands, one of a team used on a coal wagon. She was thin in flesh, hair looked bad and she showed every indication of chronic indigestion. Owner said he thought her teeth were bad as she did not eat hay well.

Upon examination a supernumerary molar tooth was found growing by the side of the second left inferior; this tooth was leaning out at an angle of about forty-five degrees and was irritating the membrane of the cheek, and seriously interfering with mastication. This was a solution of the indigestion from which she was suffering. The tooth was removed and found to be normal in size and length and perfectly sound; its mate seemed to be sound and full size. After the tooth was removed treatment was given for indigestion, and the patient in a few days was doing well. This I considered was a very interesting case, as supernumerary molars are rather rare.

On the morning of March 10th, the owner found the mare sick in the barn. During the night she had kicked out the plank partition in the stall and was found lying upon her side. She did not roll nor make any great disturbance, so the owner did not see anything alarming in her condition. He gave her a pint of linseed oil and went about his business. Accidentally meeting me about ten o'clock he asked me to drive around by the barn and see if there was anything serious troubling her. Upon arriving at the barn found her lying in the garden lot in the mud. She was plastered over with mud and water and was a very muddy animal. She was gotten up and let into the barn, where the following symptoms were noted:

Pulse 60, respirations regular but somewhat accelerated, lying down, stretching at full length upon the floor, no attempt to roll. After lying four or five minutes she would make an effort to rise, but would stop with her legs in a flexed position, lying directly upon her sternum, and remain in this peculiar position for some time, pointing with her nose to either side directly behind the forelegs rather than the flank. The pain did not seem to be acute, although she bore a very anxious expression. The ears were drooping. Remembering the attack of indigestion which had previously troubled her, I did not hesitate to diagnose the case as colic, and prescribed another pint of oil and gave her a hypodermic injection of four grains of morphine.

I thought she would be better soon, but left instructions to call me if she did not get along. At noon, March 11th, was notified that the mare was still in the same condition. Arrived at one o'clock, found the patient showing the same symptoms as the previous day—very little change. No movement of the bowels since she had been sick. Owner at noon had given one pound of magnesium sulphate in a drench. I now realized that we had a very grave case on hand. As she was dry and in a more fit condition to examine than on the previous day she was given a careful going over. Her pulse was 60° and strong; respirations normal in frequency; inspiration deep, expiration difficult, making her breathe very much like a horse suffering

from "heaves." Upon lying down it was noticed that she would nearly always lie upon the left side. She had that peculiar way of placing her knees, lopping her ears, pointing her nose and assuming the attitude which was so conspicuous the day before. Her pain was constant rather than intermittent, temperature 102.5.

Examined per rectum and found that organ empty, but high up in the bowel was felt a hard mass, which at first I thought to be a tumor, but upon closer examination concluded was faecal matter in the large colon.

Upon auscultation of the abdomen it was discovered that peristalsis was absent. My diagnosis now was impaction of some part of the digestive tract, for which she was given treatment. March 12th, 12 M., found the mare in the garden lying in the mud; the owner informed me that he could not keep her in the barn, that she would break out in spite of his efforts to the contrary and would select the muddiest places in which to lie. The same symptoms were manifested as on the days previous. She would not eat nor drink, there was no passage of faeces, no tympany, no peristalsis. The animal was growing weaker. Pronounced the case hopeless and ordered no additional treatment.

Found dead on the morning of March 13th. Post-mortem at ten o'clock by Dr. Robert Robb and myself. Opened the mare on the left side and found laceration of the right pillar of the diaphragm close to its tendonous attachment. There was no laceration of the muscular or aponeurotic portions of the diaphragm proper. About the laceration there was serious extravasation and extensive inflammatory changes. The omentum, bowels, and contiguous tissues showed evidences of inflammatory invasion. All the other organs normal. Stomach and small intestines empty. The mass which had been felt upon rectal examination proved to be faecal matter in the large colon, which was partially filled and seemed dry and hard.

This case was interesting from the fact that such conditions are so rarely seen; only a few cases of laceration of the diaphragm, as a primary affection, are on record and I have not

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been able to find a single case where the laceration was confined to the pillars.

From the post-mortem lesions it leaves no question of doubt that the laceration occurred before the sickness of the animal. The occurrence was probably on March 9th, as she was used that day upon a heavy coal wagon over a slippery road, and it is reasonable to suppose that the laceration occurred during a heavy pull.

If the symptoms manifested in this case are characteristic of diaphragmatic lacerations it would be very easy indeed to diagnose most of them. The lying down and making no effort to roll, pointing with nose over the affected region, constant pain, absence of tympany throughout the sickness, regular but deep respiration, the lying upon the sternum, with flexed knees—not sitting dog-fashion as is often seen in acute indigestion and rupture of the stomach,—the anxious expression, the loping ears, the disposition to lie in a cool place are all symptoms I have never witnessed in any other disease to such a marked degree.

Authors in treating of rupture of the diaphragm speak of patients pawing, rapid respiration, sweating in the region of the diaphragm as being the diagnostic symptoms, all of which were absent in this case.

REPORT OF TWO SURGICAL CASES.

TENOTOMY AND RESECTION OF NECROTIC PARTS OF THE SOFT TISSUES OF THE FROG CAUSED BY A NAIL.

BY DR. OTTO G. NOACK, READING, PA.

A Paper read before the meeting of the Pennsylvania State Veterinary Medical Association, at Franklin, Pa., Sept., 1897.

On December 3, 1896, I was called to see a bay horse, 12 years old, 16 hands. The owner, Mr. Fry, reported to me the horse had had to pull a very heavy load about six months ago and had limped ever since. By and by the leg shortened and he began to walk on the toe, then getting worse, being unable to

walk at all. Upon examination I found excessive volar flexion of the left front hoof in the crown joint caused by contraction of the flexor perforans, in the region between the first and second third of the metacarpus; there could be noticed a thickening in form of a hard and sharp defined swelling. My diagnosis was chronic tenosynovitis.

I informed the owner that the prognosis was not very favorable and the only treatment to be applied was tenotomy and explained to him how it had to be done. At first he was doubtful, but as the horse in the condition he was in was worthless to him, he consented. As the general practitioner has not much time to lose and the operations have to be made with little assistance, it is an impossibility to go according to rules and one has to be guided by circumstances. I disinfected at first the leg as well as was possible under the circumstances, injected right above the thickening 5 grammes of a 10 per cent. solution of cocaine, and putting the twitch to the horse's upper lip I made an incision through the skin with a pointed bistoury right at the swelling on the outside. After this I inserted a blunt tenotome with its surface lying close to the tendon till I felt it on the inside and turned the knife against the tendon and cutting it slowly, the hoof came down suddenly with a loud noise before the tendon was completely cut through and the horse could stand on his foot. Profuse bleeding showed that blood vessels had permeated already the thickening. After cleansing with a solution of creolin I applied an aseptic bandage. Two days afterwards I opened the bandage and found that suppuration had set in, perhaps by some hair or another foreign body that had gained access during the operation. The wound was cleaned every other day with creolin. After the third day of operation the horse got daily exercise for about ten minutes for three weeks. In this time the wound had healed and the horse showed by walking on the old shoes a very bad plantar flexion. To avoid this I gave the horse a shoe without calkins, but thickened heels, the toe cut very short with rolling motion, and by this I overcame

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the plantar flexion. The horse was put to work two weeks later and is working ever since.

In the middle of January, 1897, I had to attend a horse which had tread on a nail some time before, and the wound did not appear to heal, connected with great pain and caused the horse to walk very lame. I cut some horn around the wound away and recommended to soak the horse's foot in a bath of creolin. Four weeks later I was called in again with the remark that the wound had healed, but the horse still remained lame. I recommended blistering around the coronary band, which was done, but without success. I then told the owner, Mr. Chas. Miller, the only thing that could be done was to operate, as there must be a lesion of the bone with suppuration or necrotic parts of the tissues where the nail went through, but it being doubtful, the operation would be of avail. After two months consideration I was informed to operate upon the horse as the horse in the condition he was in was worthless. On June 6th I performed the operation. After casting the horse I pared the inner part of the frog till the plantar cushion was reached and found the sore left by the nail, showing a black spot, reaching into the plantar cushion nearly $\frac{3}{4}$ of an inch of the same dark color. I removed the diseased parts and applied an aseptic bandage and during four weeks I only changed the dressing 4 or 5 times, the wound healing without any suppuration whatever. The horse was put to work without showing any lameness.

A RAPID METHOD OF EMPTYING THE STOMACH IN CASE OF POISONING.

By J. H. BLATTENBERG, V. S., LIMA, OHIO.

We all know the difficulty of thoroughly emptying the stomach of a dog or cat with any drug causing vomition, when we have a subject of acute poisoning from nux vomica or strychnine on account of the severe clonic spasms in which we find our patient.

I have been very successful in saving many a good dog and occasionally a pet tabby that strayed upon the door yard of some heartless individual who, with diabolical purpose, had laid a poisoned bait for unsuspecting and trespassing "Fido."

I immediately order a gallon or two of warm water, which is usually at hand wherever one is called. If it be a large dog I use my large injection pump; if it be a cat or small dog, then a common small bulb rectal syringe is used, inserting the nozzle in the rectum, grasp the sphincter ani with fingers and have an attendant or sympathetic bystander pump the water with steady pressure. In 40 seconds to 1 minute I have forced water completely through the alimentary canal and thoroughly washed out the stomach, causing two or three vomitions before relaxing hold on sphincter, thus having gotten rid of all poison except what remains from absorption. I then give chloral hydrate hypodermically, according to size of patient.

When desiring immediate vomiting in small animals, I have been using this mode of procedure for several years, having given a dog an extra large enema with above results. Experimenting upon dogs and cats has proven it to be void of danger to patient.

REPORTS OF CASES.

"Careful observation makes a skillful practitioner, but his skill dies with him. By recording his observations, he adds to the knowledge of his profession, and assists by his facts in building up the solid edifice of pathological science."

INTUSSUSCEPTION OF SMALL INTESTINE OF COLT—OPERATION—RECOVERY.

By Dr. E. MAYHEW MICHENER, Veterinarian, University of Pennsylvania, Class of 1890.

On October 11, 1897, a colt, aged three months, property of Cloverdell Farm, Colmar, was noticed at 6 A. M. to have colicky pains, and ordinary remedies were given without relief. I saw the colt for the first time at noon of the same day, and found it in great pain, constantly up and down and taking the dorsal position when down.

My diagnosis was some obstruction of bowels, probably intussusception or volvulus of small intestine. Prognosis, grave.

Operation was accordingly advised, as affording the only

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hope. The owner considered the matter until 4 P. M., when he decided to let me operate, and sent in great haste.

On arriving at the farm again about 6 P. M., I at once prepared and arranged an electric light, chloroformed the colt scrubbed whole under surface of the abdomen with hot water and soap and sponged off with hydrargyrum bichloride, 1-1000. The animal was laid on a clean sheet and opened by a median incision of the abdomen seven inches in extent, in front of the umbilicus. The small intestine was secured and pulled over half of its length through the opening and laid on the abdomen between the hind legs. The cause of the trouble was now revealed—an intussusception two feet three inches in length.

The bowel was very much swollen and leather-like to the touch and exceedingly weighty. By letting assistant (with clean hands) pull steadily and carefully at the bowel, while I pushed at the opposite end of the obstruction, I succeeded in righting the trouble. As the gut slipped into position there was a considerable quantity of nearly colorless liquid liberated, which had transuded to the space between the two peritoneal surfaces. About one foot of the imprisoned gut was dark blue to almost black in color and very suggestive of gangrene. After stroking the dark part with the hand for a minute or two to promote circulation, the intestines were returned to abdomen and wound closed by three lines of sutures, row of continuous for peritoneum, one row for recti muscles and tunica abdominis, one row for skin, waxed linen thread being employed, this being the only material at hand. The abdomen was sponged with bichloride and the anæsthetic removed. Time about twenty minutes.

The colt soon recovered from the chloroform and nursed in less than thirty minutes from finish of operation. Temperature before operation 103.5-6, one hour after operation 104 1/2. The colt passed a very good night, standing most of the time, but occasionally down and resting easily. Nursed frequently, and drank a small quantity of water at short intervals.

October 12th, temperature 104 1/2, slight diarrhœa. Peristaltic movements energetic, causing a loud rumbling sound; otherwise doing very well.

October 13th, temperature 104, bowels still active, but fæces more solid and covered with some tough mucous. Improved in appetite and general appearance. Wound doing nicely.

From this time on the temperature dropped slowly to normal. On the ninth day the stitches in the skin were removed

to keep them from cutting. The wound in the skin gaped a little.

Suture of recti muscles and peritoneum removed on the thirteenth day, showing complete union.

There now (November 2, 1897,) remains only a slight wound, rapidly healing. The animal is lively and well.

A POST-MORTEM EXAMINATION WELL WORTH THE TROUBLE.

By C. HENRY DOEPEL, D. V. S., Mamaroneck, N. Y.

On Sunday, November 14th, I was called at 7 P. M. to see a patient who, I was told, could not make water. I reached him at 7.30, and found as follows: A brown gelding, seven years old, had been brought from New York City, November 1, 1897. Since that time had light work and was fed about two quarts of oats and one quart bran three times daily; was an exceptionally bright, free driver, and showed no illness whatever until the present time.

The owner, Mr. T., had driven him in the afternoon, and noticed that he did not care to eat when he fed him at six o'clock, and immediately began to roll and kick. I was then sent for, and that was the history of the case as I got it.

The patient at this time was very uneasy, lying down and getting up continually, almost constantly making strenuous efforts to defecate and urinate; no flatulence in the usual place, but great quantities of gas, eructations from the stomach, and pronounced dyspnœa. Temperature 101° F. I gave at once

R	Chloral hydrate,	25.
	Spts. ammon. arom.,	50.
	Sod. bicarb.,	15.
	Aqua,	q. s.

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following this drench with two pills of carbo-ligni, hoping to absorb the gas which was in the stomach. After administering drench and pills, I gave an enema of warm soapsuds, with no result, as the rectum was quite empty, and to satisfy the owner (who still insisted that "it was his water that bothered him"), I used the catheter, taking about one-half pint of urine. These operations did not relieve his distress, as he still continued to strain every few minutes.

In about one-half hour he was fairly quiet, and I was about preparing to leave, when the symptoms suddenly changed. He stood still in one spot, and trembled violently, his whole body shook, so much so that the vibration could be plainly felt on the floor; perspiration pouring from every pore in a stream;

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dyspnoea very marked; countenance anxious and eyes staring. He exhibited all the symptoms of aconite poisoning, except that he did not salivate. I questioned the owner sharply, but he said positively the horse had received no medicine whatever.

For the time being, I became a disciple of Hahnemann (*similia similibus curantur*), and gave tinc. aconite rad., 1.5, repeating the dose in fifteen minutes. This afforded him relief, so that at 9.30 P. M. I left, with instructions that if he again became restless to give him sod. bicarb., apply mustard to the abdomen, and call me up, as I was within walking distance.

When I called Monday morning, I found my patient of the night previous in the field, ready for burial, the owner telling me that he died at 1 o'clock A. M. Had no further pain after I left, and died very quietly. At noon of the same day I held a post-mortem.

On opening the abdomen I found pieces of grass and particles of ingesta adhering to the viscera and abdominal walls; the intestines were very nearly normal in appearance. Here and there along their course could be seen very small inflammatory patches. The abdomen contained five gallons of fluid, which seemed to be only water slightly tinged with blood. The great omentum was so mixed up and wrapped around about one peck of masticated oats and hay, that it could be with difficulty separated and withdrawn from the mass. On removing the stomach, the cause of all the trouble was found; it was ruptured very nearly the whole extent of its greater curvature, the rent extending from one inch from the cardiac opening to two inches of the pyloric ring. The edges of this wound were not fresh, a considerable blood clot adhering. I should judge from the appearance that it was at least twenty-four hours old.

My reason for reporting this case is because the symptoms were so different from what is usually seen in rupture of stomach. At no time during his illness did he sit on his haunches or lie on his back—two very diagnostic symptoms that I have seen; and the absence of pain, I mean such pain as would be expected with such a lesion.

IS IT HOG CHOLERA?

By J. A. McCrANK, D. V. S., Plattsburgh, N. Y.

From time to time I have noticed in the columns of our veterinary journals that some practitioner gave the history of some case, new to him, that came under his notice, in his practice. He asked for information on the matter from older practitioners

or from those who possibly were more intimate with the trouble. Now, this young man looks on the journals as I do—the only medium which veterinarians have at hand to connect them with the whole veterinary community. I have repeatedly noticed that no one volunteered to help our young friend, no one seemed to take up the subject. Why? Are we afraid to wound his feelings by telling wherein he erred? Are all veterinarians as ignorant as he who asked for help? or is it indifference? I hope this will not be the way you treat my request. Censure me if you will for my ignorance, pity me for my stupidity, but help me in my troubles. I hope you will not look at my cases as too trivial for your consideration. As a brother professional it is your duty to help me.

For a few years I have had trouble with the hogs of my vicinity; many of my clients have lost great numbers. I have worked on the cases steadily, getting what I think a complete set of symptoms. I have invited aid where I could get it.

The disease breaks out only where there are large herds. At first I thought the village swill was the cause, on account of dish washings being carried home, and this often contains soap. I tried to prevent the people from using the village swill, but such numbers were kept because the village refuse could be had, and it was impossible to do without it. We then tried to keep soaps from being used; this had a marked effect on the animals, but soon they returned to their sickly condition.

We found that when the hotel proprietors would not buy soaps for the kitchen help they bought "Pearline," "1776," etc., for themselves. Now, we left the village and got swill from the boats of the lake. This had a marked effect for awhile, imaginary or otherwise. I believe the soaps had something to do with increasing the severity of the disease, but I had a herd which never got village slops at all. They were fed on the offal from slaughter-houses. Yet they died in great numbers. Another herd owned by a baker never got slops, only from the house, and old or sour bread; yet they were carried away in great numbers; and I have eventually come to the conclusion that hog cholera was the trouble.

Symptoms.—The animal falls away in appetite, which becomes irregular, the bowels are constipated, gait becomes unsteady with a swinging of the hind quarters. In a couple of days a profuse diarrhoea sets in, with a very disagreeable odor, black colored stools which cause pain in their discharge. The pig lies most of the time, and will not arise unless forced to do

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so; when he stands he is forced to put his nose to the ground to balance himself; the color of the skin changes, becoming darker, with bluish spots. Death ends the agony in from three to ten day.

Post-mortem :—Outwardly the body is very much emaciated; large spots about abdomen, ears, etc.; mucous membrane of the eye dark. On opening immediately after death a disagreeable odor meets the operator; a large amount of coffee-colored fluid is found in the abdominal cavity. The intestines contain very many ulcerated spots on the serous coat, and the mucous coat is very thick. The liver has lost that smooth, glistening tint; it is dark and dull in color, the surface is very irregular, and on cutting is friable, brittle and dry to the knife. The spleen is in much the same condition. The lung tissue is thickened at parts, and the glands of the body are very black.

Prognosis :—A very few cases recover, about three per cent., and they are immune from the disease, likewise their progeny, and we have many old sows kept for breeding purposes.

Treatment :—None. I made no effort to treat the animals. Partial paralysis exists from the very first symptom.

Now, friends, do any of you doubt me when I diagnose the disease to be hog cholera? If it is not cholera, then what is it?

Will any of you suggest a course of treatment? Don't spare my feelings.

CATTLE POISONING.

By J. A. McCrANK, D. V. S., Plattsburgh, N. Y.

I have had some trouble with cattle in my district lately. The cow comes home in the evening from pasture in perfect condition, gives accustomed amount of milk, but next morning when we see her she is unable to rise without aid, unfit to stand when she is helped up; her supply of milk very much diminished, and in a few cases it is stringy. She will not eat, yet her nose is moist as if in health, her temperature below normal, pulse very weak and slow. She appears unconscious of her surroundings; she has a very profuse diarrhoea, of a slimy consistency.

In a few cases the animal, after lying paralyzed apparently, for when she falls there lies, whether on her abdomen or side. She appears as if unable to concentrate her forces to make an effort; she remains in this comatose condition for a few days, when I have had them become frantic; no fence nor door could hold her back; she may run wild over fields for an hour, when

suddenly she comes to a stand, where she remains for hours, falling back into that state of coma, from which she fails to recover.

Diagnosis :—Vegetable poisoning.

Treatment :—I treat the symptoms, giving digitalis and liquor arsenicalis, three or four times per day, after a purgative of Epsom salts.

I have had very good results from this treatment when I get the case at the outset, but after four to five hours my success is marked by the great number of deaths.

I find this trouble exists in certain localities, many animals from the same pasture or neighboring pastures. I have had the animals removed with good results.

Again, veterinarians, am I right when I say those animals are poisoned by some herbage found in the pasture lands? Answer, if you please. I am using the veterinary columns for information.

PURPURA TREATED BY ANTISTREPTOCOCCUS SERUM.

By W. G. HOLLINGWORTH, D. V. S., Utica, N. Y.

I wish to report a case of purpura hæmorrhagia which occurred in a bay gelding that had just made a good recovery from pneumonia, but under very poor hygienic surroundings. One day the owner discovered some small swellings, but paid no attention to them until they were very large. The horse could not move, so he sent for me. The diagnosis being easy, I prescribed in the regular way. I told him that I had ordered some antitoxin, and, as soon as it arrived, would proceed with the new treatment. When I arrived at my office it was there. The next morning I made an early call, and was sick, so to speak. I found my patient in great agony, swelling all gone, and commencing to have fluid discharges from the bowels, mixed with some food. My opinion was asked and it was unfavorable. The owner said he would not give five cents for his life, but I made up my mind to try the serum. I first gave a hypodermic of morphine, then left a hypodermic syringe to be kept disinfected and to give 10 c. c. of the serum once in three hours till I came again. His temperature was 105°, pulse 96, respiration 36. I called at 5 P. M., and found my patient in not so much pain; continued the serum treatment, once in three hours, through the night, and left cannabis indica to relieve the pain. Next morning when I called my patient was better, almost free from pain, feces fluid and slightly bloody; inclined to eat hay, but would

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not touch anything else ; temperature 103° , pulse 50, respiration 20. Gave instructions to give the serum once in six hours. I called that night ; temperature 100° , pulse 50, respiration 16 ; ready to eat bran mash ; faeces in a better condition, inclined to be in balls and no blood ; reduced the frequency of the serum doses to once in eight hours ; everything progressing finely, swellings going away ; commenced to give only 10 c. c. a day, when, on my next visit, I found swelling very much larger ; not so well ; increased to once in eight hours again. Next day they were smaller ; kept this up for four days ; then reduced to once in twelve hours for a few days, gradually falling off till he received only one a day. Kept this up for four days ; then stopped to wait further developments. Everything going on finely ; put my patient on tonics and he made a splendid recovery.

I hope others will try this serum treatment, and report. I am very much taken with the treatment. I have just received 200 c. c. more, to have on hand, so I will not have to wait for the next one. I would say that the horse received 340 c. c. all told.

VESICO-RECTAL FISTULA.

By J. D. STURM, V. S., Dana, Indiana.

On September 15th, a three-year-old mule came to my barn with a long standing case of impaction of the rectum. The anus and rectum were badly swollen, and from the enormous quantity of faeces lodged therein I judged that he had been constipated quite a while.

The owner of the mule said he had been running on blue grass pasture, which was very dry, owing to the long continued drought. I dislodged the faeces, and gave the mule the ordinary treatment. By the 20th the swelling on anus was all gone, so I gave the owner the necessary instructions as to his feed and care, and heard no more from him until September 30th. The owner called and said the mule was not urinating right, but was urinating through his rectum. I called and found the following conditions : The mule looked normal with the exception of above condition. He would strain as if urinating but pass nothing ; then would arch his back and strain as if to evacuate, and expel the urine through the rectum, and would expel it as if one had given a warm-water injection. I made a rectal examination, but could not detect anything ; found faeces about ten to fifteen inches anterior, without any urine on them ; by

that I knew the opening was from the urethra. I then passed the catheter, which was quite a task, there being a stricture just forward of the arch, but found no urine. I gave the mule a laxative and informed owner I would call the following day. I then returned to my office and proceeded to investigate the case. Finding nothing to enlighten me, I proceeded to use the catheter until October 4th. Finding at this time that I had not yet improved his condition, I procured a new catheter, as strong and stiff as possible, and put a ligature through the end of the catheter, and prepuce well up and left it there twelve hours. When I again called, found the urine passing naturally. I also used an astringent per rectum. On October 5th took catheter out, cleaned it, and put it back. On October 6th removed it again, and seeing it was irritating the urethra, I left it out until October 7th, on which date I found the animal urinating naturally. I did not give any more medicine, but watched the case from day to day. I saw him last October 20th, and found him completely recovered.

AMPUTATION OF PENIS IN TWENTY-THREE-YEAR-OLD GELDING.

By JAMES M. REED, V. S., Mattoon, Ill.

I very much enjoy the monthly visits of the AMERICAN VETERINARY REVIEW, and consider it my duty, as well as that of every other progressive veterinarian, to contribute as far as possible such information as will be interesting and instructive to its many readers. As practitioners we know the difficulties met with and the great care and close observation required to make correct diagnoses and prognoses, the difficulties in controlling our patients, and satisfying our patrons from a business point of view. I shall endeavor to assist in the general dissemination of practical knowledge by sending in the report of a case which came under my observation. I notice that there are quite a large number of interesting cases reported in each issue of the REVIEW on diseases and treatment in the domestic animals, and, being rather a close student of animals, I shall report the following case:

A bright bay gelding of trotting breed, about twenty-three years old, with paraphymosis of the penis, caused by a kick from another horse about nine months previously. There was no fever and no soreness to the touch nor upon pressure by the hand, but it had been inflamed and discharging a pussy fluid for six months from the time of injury, which had subsided and left the penis in a paraphymosed condition. On account of its size,

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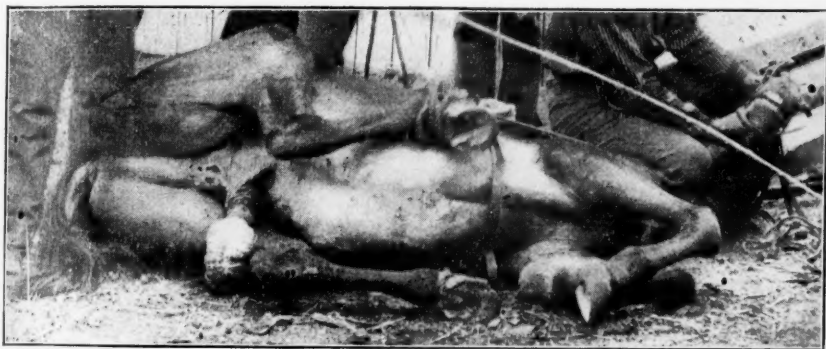
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it was impossible to retract the penis within the sheath, and it hung down to the length of eighteen inches beneath the belly, making it unsightly to view and difficult for the animal to travel.

After thoroughly sterilizing all the necessary instruments, and taking other antiseptic precautions, I proceeded to amputate the penis by casting the horse on his left side, and securing him so as to expose the inguinal region as in castration. A hard-rubber catheter was passed into the urethra to above the point of amputation, and an ecraseur was placed firmly around the penis above the diseased area to prevent hæmorrhage and also to serve as a means of holding the organ outside of the prepuce or sheath. Pulling back the skin, an incision was made in the skin around the penis, then making a clean incision through to the urethra, leaving the urethra protruding about one-half inch,



having the arteries in plain view, which were tied with linen thread. The skin and urethra were then stitched together, the ecraseur removed from its position, the penis retracted within the sheath, and the animal was allowed to arise. He appeared to be a little nervous for a few minutes, but soon rallied and went to eating, after which he was taken to his stall, a distance of eight blocks, appearing as fresh as ever. The wound was dressed with a solution of carbolic acid, tincture of arnica, tincture of iodine, and glycerine, three times a day, after washing each time with formaline.

I visited the patient on June 18th (two days after the operation), and found the temperature 105, respirations 45, pulse 50; some swelling, appetite good; apparently feeling sore, but looking bright. The wound had been bleeding some but not to excess.

June 20—temperature 102, pulse 72, respirations 31; swelling more extensive; looking bright; appetite good; black discharge from wound; dressing same as in the beginning.

June 24—temperature, respirations and pulse normal; appetite good; took out the stitches; swelling slightly subsiding; discharge of pus from wound.

July 2—pulse and respirations normal; temperature slightly elevated; posterior portion of the penis slightly swollen; bathed externally with linseed oil, 12 ounces; turpentine, 2 ounces, and ammonia water, 2 ounces, three times a day, washing off once a day with warm water, dressing wound same as in the beginning. Appetite good; looking bright from eyes; wound healing rapidly.

On July 13 I visited the patient and found him normal in every way, with wound completely healed. Discharged him sound and in good health.

To the readers of the REVIEW this narrative may not be of much interest, but to me the case is unique on account of the age of the patient and the comparatively little trouble experienced in recovering.

A DENTAL CYST AT THE BASE OF THE EAR.

By E. C. WALKER, V. S., Norway, Maine.

During the month of June, 1896, I was called by A. F. Andrews & Sons to examine a horse, one of a nice pair they had just purchased in the West, which seemed to me to be suffering from a fistula, the opening being near the butt of the ear. In operating for cure of the fistula I passed a director to ascertain the course of the fistula, and found it passed under the ligaments of the ear and came in contact with a bony prominence, which I removed with the forceps and found, to my surprise, that it was what I called a tooth. I respectfully submit the tooth, or what you may be pleased to call it, for your examination and shall be pleased to read your opinion in the next issue of THE REVIEW.

[The specimen referred to above is that of the contents of a dental cyst, not a very uncommon condition to be found at that location. They are fully described in Williams' "Veterinary Surgery," page 430, edition of 1886; also, Hinebauch's "Veterinary Dental Surgery," page 124. They have been found in almost all portions of the body—the sinuses of the head, the temporal and frontal bones, base of the ear, intermaxillary space, the lumbar region, testicles, ovaries and near the kidneys.—EDITOR.]

A PRINCELY GIFT.—The King of Sweden has set aside the sum of 2,200,000 kronen (\$618,750) for the stamping out of tuberculosis. This sum was the gift of his subjects on his attaining the twenty-fifth year of his reign.—(*Central Zeitung*.)

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TO IMPROVE PHILADELPHIA'S MEAT INSPECTION.

A PUBLIC MEETING BY THE WOMAN'S HEALTH PROTECTIVE
ASSOCIATION—MANY PROMINENT VETERINARIANS
ADDRESS THE MEETING.

(From the Philadelphia Press, December 7, 1897.)

A meeting of the Woman's Health Protective Association was held at the College of Physicians, Thirteenth and Locust Streets, last evening, in the interest of the important measure of municipal meat inspection and the need of a better system for Philadelphia. In view of this meeting a committee of the association, composed of Mrs. E. J. Bartol, Miss Josephine Pope, Mrs. Lizzie S. Decker and Mrs. Baird, visited several of the one hundred or more small slaughter houses that are scattered throughout the city. What they found was graphically told by Miss Pope last night, and for the consumers of meat it proved an extremely interesting story. Many of the women present almost became converts to vegetarianism on the spot.

Mrs. John Scribner, president of the association, opened the meeting. She referred to the magnificent work the women did last year in the matter of the bakeshops and declared that they have gone into the present grave matter with a determination not to rest nor leave any stone unturned until they see in Philadelphia a corps of meat inspectors that will make "bob" veal, tuberculous beef and trichinic pork rarer than the dodo.

A number of men ranking high as bacteriologists, as veterinarians and in medicine were present, and all spoke of the importance of the inspection of all the meat consumed in a great city like this, and the urgent need, if such a state of things were to be accomplished, of concentrating in one vast abattoir all the slaughtering done, when inspection might become a systematic and perfect thing.

These men were Dr. D. E. Salmon, chief of the Bureau of Animal Industry, of Washington, D. C.; Dr. A. W. Clement, State Veterinarian of Maryland; Dr. Benjamin Lee, Secretary of the State Board of Health; Dr. H. D. Gill, of the Health Department of New York City; Dr. George Strawbridge of the County Medical Society; Dr. Leonard Pearson, of the State Veterinary Sanitary Board; Dr. John W. Adams, consulting meat inspector of Philadelphia, and Dr. W. Horace Hoskins and Dr. Rush Huidekoper.

Dr. Salmon spoke first and described the methods of Federal

inspections of meats for foreign and inter-State commerce. He referred to the dangers arising from the distribution of diseased foods, meat, especially, and expressed strongly his approval of the steps of the association.

Dr. Huidekoper said that it was a question which should be taken up at once and followed up with untiring zeal, as it is one of the greatest interest to the community—interest far greater than the community itself can realize.

Dr. Benjamin Lee spoke of trichinosis, the parasitic worm which infects pork when it is raised under unhealthy conditions, and, of the ease with which it is propagated in the human organism. He described the way the disease is acquired, by eating pork not sufficiently cooked and which was infected.

Dr. Clement, of Baltimore, spoke briefly on the conditions existing in that city, and which he said are not what they should be by any means. He deplored the absence of precaution in the matter, for he said that he found one and forty-seventh one-hundredth per cent. of the cattle handled by stock dealers and drovers to be infected with tuberculosis.

Dr. Gill spoke of the methods in New York City, where there are four meat inspectors and two fish inspectors, who found that 1,500,000 pounds of diseased meat and fish are annually shipped into that city. Ideal inspection does not exist, he said, and the only way to possibly cope with the matter is to have first a proper and efficient corps of scientists, a laboratory for them to work in, sufficient outside inspectors to do the field work, and, most important of all, the absolute exclusion of politics from the work.

Dr. George Strawbridge dealt with tuberculous cattle and the manner of the spread of that dire disease by meat and milk. The remedy, he suggested, was that suggested by all others, the centralization of the slaughter houses into one great abattoir, where the inspection could be thorough and easy.

Dr. Leonard Pearson described the methods of Berlin, Paris and other European cities where this plan is carried out, and where it is absolutely impossible for diseased meat to reach the dealer or the consumer. He gave a picture of the methods here, of the slaughter of the beasts and the subsequent dragging of the meat through dirty, dusty, germ-infected streets. That, he said, was enough in itself to make people pray for the early arrival of the centralized abattoir and the infliction of a penalty for the exposure for sale of meat that does not bear the hall-mark of the inspector and the tag of the inspectress.

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EXTRACTS FROM EXCHANGES.

GERMAN REVIEW.

By W. V. BIESER, D. V. S., New York City.

VALUE OF NEURECTOMY.—R. declares neurectomy to be of limited value, inasmuch as most patients become unfit for use after a year or so, according to his experience; the diseases for which the operation is indicated makes unhindered progress in spite of the cause. In such a case such pathological changes occurred at the crown of the hoof that the axis of the foot was entirely changed, the horse being only able to walk upon the outer edge of the hoof.—(*Berl. Thierärzt. Woch.*)

FATAL PANOPHTHALMITIS IN THE HORSE.—Four weeks after an injury to the left eye, suppurative panophthalmitis set in, the patient thrust his head in a corner of the stall, or leaned it for support upon the manger; the animal was quite oblivious of his surroundings, becoming only momentarily conscious of being called; in such moments he took up a little fodder, only to let it fall, and then fell back into his original apathy again; respiration was deep and slow, pulse weak, the head very hot. Five weeks after the injury the animal suddenly shook his head, staggered and fell down dead. At the autopsy the right eye was normal, the optic disc of the left eye infiltrated, and into the nerve itself three large hæmorrhagic clots. The dura mater was markedly injected, the pia mater at the base was congested; the brain substance showed softening and glistened from moisture on section; the ventricles contained about a thimbleful of serum.—(*Berl. Thierärzt. Woch.*)

TETANUS ANTITOXIN IN TETANUS [*Nocard*].—Nocard insists that however useful tetanus antitoxin may be as a preventive, it is not of the least value against tetanus itself. The failure of the remedy against the disease itself is due to the fact that the symptoms of tetanus appear only a long time after the absorption of the poison, at a time when the nerve cells have been irreparably damaged. Of what use is the injection of the antitoxin then? Upon Behring's asserting that he had an antitoxin that would cure tetanus already developed, N. decided to test the remedy. Calculating beforehand that a dose of 6 mg. would be the fatal dose of tetanus antitoxin for a horse, keeping in mind the fact that the first symptoms of tetanus develop in from five to seven but usually on the sixth day after the inocu-

lation with the *toxin*, remembering furthermore that such horses always died, for the 6 mg. of toxin constituted the fatal dose, it was easy to substantiate or refute Behring's claim that his antitoxin could cure tetanus already developed. Of 33 animals receiving the fatal dose of tetanus toxin, and receiving Behring's curative dose (5 c. cm.) of *antitoxin*, receiving this dose moreover intravenously according to Behring's directions, upon the appearance of the first symptoms of tetanus, all died, the animals treated with antitoxin dying sometimes sooner than the animals, that received the fatal dose only, but no antitoxin at all. Whether the Pasteur or Behring antitoxin be used, after the first symptoms of tetanus once set in, the antitoxin cannot control the course of the disease. Nay, what is more to the point, even if the tetanus antitoxin be injected 24 hours previous to the onset of the first symptoms. Even if more than the curative dose be injected, even if it be injected into the jugular (which can easily be done before the incubating period or period of inoculation to the first day of symptoms break out is known to be from five to seven days and usually six days) the disease cannot be controlled in the least. When made 48 hours before tetanus may be avoided. If immediately following the injection of the toxin, the antitoxin be injected in small doses subcutaneously no tetanus ensues. Taken in all, the prevention or immunizing power of tetanus antitoxin is unlimited when curative power is absolutely *nil*.—(*Deutsche Thierärztl. Woch.*)

AMERICAN REVIEW.

POTASSIUM IODIDE FOR CHAMPIGNON [By M. J. Treacy, *Vet. U. S. Army, Fort Meade, South Dakota*].—The author narrates that last April he saw a horse used for livery purposes, emaciated, lame from an immense unilateral champignon. After draining off the effusion its base measured 17 inches by 8. There was no discharge, and no pus found upon exploration with trocar and canula. His physical condition was looked after by smoothing irregular teeth and administering a tonic, consisting of 2 per cent. acid sol. arsenic, \mathfrak{z} x; tinct. ferri chlor., \mathfrak{z} iy; strychnia hydrochlor., gr. xxvj; syrup simp., \mathfrak{z} j. Mix. Sig. Shake; half ounce by syringe, morning and noon, with one drachm potash iodide every evening. Apply hose to scrotum for one hour night and morning; gentle exercise two hours daily. There was no visible decrease for ten days, after which the tumor rapidly reduced, the horse now resuming severe work,

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and in 26 days from beginning of treatment no trace of enlargement remained, the cord not being larger than finger. Although the animal has received hard work and little care, it has not returned. Author recommends the iodide of potash in two or three drachm doses daily until absorption begins at least, as he observed no improvement in above case until the system became saturated.—(*Jour. Comp. Med. and Vet. Arch.*)

SPASMODIC CONTRACTIONS WITH HYPERTROPHY OF THE RETRACTOR MUSCLES OF THE PENIS OF A BULL [*By D. S. White, D.V.M., Vet. Dept., Ohio State University*].—A bull was brought to the author with the explanation that when he attempted to serve a cow the penis failed to protrude from the sheath. The author was given an opportunity to observe the attempt, which was unusually vigorous. At the beginning of the effort the penis protruded two inches beyond the orifice of the prepuce, but as entrance was about to be made into the vulva it was drawn back again into the sheath and the ejaculation made therein. The retraction appeared to be made forcibly. On examination of retractor muscles of penis they could be plainly felt at their attachment to the S-shaped curve in the corpus cavernosum, and as the sexual excitement became greater they seemed to be thrown into tonic spasmodic contractions, drawing the penis far back into the sheath. The condition being permanent and the bull in this state worthless for breeding purposes, it was decided to sever the muscles at the S-curve. On cutting through it was noted that the muscles were hypertrophic, forming two distinctly marked semi-conical bands of about double the normal size. The fibres were seen on cross section as pale bundles of muscular tissue; the ligamentous structure correspondingly not so well developed as others subsequently examined. The operation, very simple, was followed by perfect recovery, and the bull has since stood at the head of a herd of forty cows, having sired a number of calves. The author has failed to find a similar case in the literature at his command.—(*Jour. Comp. Med. and Vet. Arch.*)

CORRESPONDENCE.

AS TO THE NEXT MEETING PLACE OF THE U. S. V. M. A.

ITHACA, N. Y., Dec. 20, 1897.

Editors American Veterinary Review:

DEAR SIR:—In the December REVIEW, page 643, there is found a set of resolutions passed by the Pennsylvania State

Veterinary Medical Association regarding the next meeting place of the U. S. V. M. A., which deserves more than a passing notice.

The first "Whereas" defines, for the purposes of the parties interested, what they mean by "out West"; that is, Buffalo and Nashville are 350 miles or over from the Atlantic seaboard and only 3000 miles from the Pacific coast.

So far as we can tell, this association makes the line between the "West" and "East" the crest of the Alleghany mountains, which are continued northward by the Catskills and Adirondacks, leaving the writer still "out West," after having recently moved 2500 miles eastward.

The second "Whereas" avers that the veterinary profession in the East has been neglected through the holding of too many meetings in the "West." In this connection it should be recalled that the gentleman whose earmarks the resolutions bear, controlled the location of the meetings at Des Moines, Buffalo and Nashville.

The "Resolution" in chief is founded upon rather peculiar geographical ideas, when it favors the holding of the next meeting at Boston instead of "a long distance from the centre of membership." We have heard that Boston was "the hub of the universe," but had not supposed it was in the centre of the membership of the U. S. V. M. A. A casual study of the map would give one the idea that to the northeast, east and south of Boston the country is rather wet for veterinary practice, and that a line drawn through Boston from northeast to southwest would not leave very many members of the association on the easterly side of it. A careful study would probably reveal that the centre of our membership is west of Boston, and, if it be not so, it should be, as the centre of the veterinary population is probably nearly as far west as a line passing north and south through Chicago, and if the centre of our membership does not approximately correspond to the centre of veterinary population, then the association is at fault and should correct it.

There is a danger that, in case the meeting goes to Boston, the discrepancy between the centre of veterinary population and our membership may recede yet farther eastward. There is not universal confidence in the West that its membership is justly treated in the society. In the thirty-four years of its history, *one* member west of the Alleghanies has presided for *one* year, and the writer has heard murmurings from Western members that they should be so rarely honored.

Recently Eastern men quietly secured an amendment to our constitution by which, instead of one, there should be three Vice-Presidents—first, an Eastern Vice-President, from the territory east of the eastern time line (Buffalo); second, one from the central area, and, thirdly, one from the West, thus adroitly securing perpetually to the East the senior or ruling Vice-Presidency, so that, no difference what may happen to the President, the Vice-Presidency renders the East secure in its control, with the Second and Third Vice-Presidents thrown out as “sop” to Western members.

There is yet another possibility connected with the proposed selection of Boston as a meeting place to increase the distrust of Western members. An amendment to our constitution has been proposed to elect the President for a term of two years. If the meeting goes to Boston, the extreme easterly point available, the Western attendance will be light; and, if the amendment passes, the first President elected under the new *régime* would, in all probability, be an Eastern man, and Western members would be prone to believe that in 1899 the meeting would go West, to return eastward in 1900, in good time for the election of a President for two more years. Such a course is readily attainable under our constitution, by which the President, through his Executive Committee, which he selects, names the place of the meeting.

With a record of 34 Eastern Presidents to one from beyond the Alleghanies, and with 29 Atlantic seaboard meetings, against 5 trans-Alleghany meetings, it seems unfortunate that a cry of sectionalism should be first raised by Eastern members.

The selection of the next meeting-place will, perhaps, influence the action upon the proposed amendment to elect a President for two years. Few, if any, Western members favor it, and wherever the meeting shall be held it is to be hoped the amendment will be defeated. We have sufficient data since 1890 (the date of the first trans-Alleghany meeting) to defeat the proposition on its merits. From 1890 to 1897 inclusive, five men have presided—three for one year each, one for two, and one for three successive years, without any tangible evidence being adduced of the superiority of a long over a short term of office.

Our most available data for comparison are finance, publications and membership. While our records are not perfectly clear, the following tabular data will be found approximately correct :

Administration of.	Date.	Increase or Decrease in Funds.	Number of Annual Proceedings Published per Annum.	Increase or Decrease in Membership.
Michener.	1889-90	—\$ 5.39	I	+ 33 or 33 per annum
Huidekoper.	1890-92	+ 18.11	* 0	+ 26 or 13 “ “
Williams.	1892-93	+ 117.58	2	+ 68 or 68 “ “
Hoskins.	1893-96	— 351.81	$\frac{1}{3}$	— 47 or 16 “ “
Osgood.	1896-97	+ 328.52	I	— 7 or 7 “ “

* Report of 1890 was published by AM. VET. REVIEW without supervision by or expense to the association.

A study of these data will show that the greatest gains in funds, membership and publication of proceedings were attained during one-year administrations, and it may be added that the highest sum of money in the treasury (\$875), and the maximum membership (390) and number of annual reports published in one year was attained in 1892-93, a one-year administration, while the lowest ebb of our treasury (9 cents—several hundred dollars indebtedness) was reached in 1895, the middle year of a three-years presidential term, while the decrease of 47 in membership during this administration excels all other records in our history.

With such facts confronting us, there seems little argument in favor of prolonging the presidential term, especially in face of the alleged precedent that a *faithful* President must be re-elected and that the one-year Presidents have been incompetent.

W. L. WILLIAMS.

A “CAUSTIC” COMMUNICATION FROM THE ACCREDITED CREATOR OF THE “CAVALRY CAUSTIC.”

FORT SAM HOUSTON, TEXAS, Dec. 9, 1897.

Editors American Veterinary Review:

DEAR SIRs:—At the last meeting of the United States Veterinary Medical Association, some smart Alick, name unknown and presumably of little consequence, constituting himself a watch-dog or a bull-dog of that Association, brought my name before the Executive Committee as an advertiser of a patent, quack, or cure-all remedy, viz., “Griffin’s Cavalry Caustic,” purporting to cure spavin, curb, ringbone, sidebone, splint, rheumatism; supplanting the firing iron and raising hades generally with the regular practice and the superficial and deep anatomy of the *genus equi*, and all for a dollar a bottle of six-ounce capacity, warranted to last a life-time if kept well corked and in a cool place. The S. A. doing the private detective business on his own hook for the Association, probably during the lonesome days between “calls,” could have reached the “Cavalry Caus-

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tic" man by mail, but he didn't try; he evidently thought he had him by the genital glands, and produced in evidence a cut of a cavalry horse, backed by an out-of-date trooper, said cut showing the legend of the cure underneath, and offering the formula for \$20, cold cash; and he proceeded to apply the vise to the grip he thought he had on that part of the anatomy where the appendage is supposed to be abbreviated.

For the benefit of numerous acquaintances and a few friends in the profession veterinary, I take this opportunity of disclaiming any connection with the advertising scheme above referred to, for proof of which see stoppage of ads., not because I feared to antagonize the opinion of any individual or body of individuals, but because I was unaware of the ads. until they brought in a number of orders, which were not filled. The scheme originated in the mind of a friend with an eye to the omnipresent ducat, regardless of other considerations; the ads. referred to made their appearance in the *Horseman* and *Horse Review* during the month of August, I believe, but were unknown to me until orders began to arrive, as I am not a subscriber to these papers, although I must thank the proprietors for forwarding marked copies during the run of the ads. The stuff advertised was a liquid blister that has been prescribed in my practice for several years, and has no advantage over other ordinary blistering preparations except as to uniformity of strength and cleanliness. My friends in the Association need have no fear of defection from its tenets on my part without first offering my resignation as a member; but, to show that no ill feeling exists, I am willing to furnish the gaping hiatus in the spissitude of the cranium of the active Alexander with the formula of the "Cavalry Caustic," "free, gratis."

Yours euphemistically,

G. E. GRIFFIN (Vet.), *New York.*

OBITUARY.

ALEXANDER W. STEIN, M. D.

The profession, and especially the alumni of the American Veterinary College, will learn with the most sincere regret of the death of this distinguished surgeon, which occurred at his residence, 30 West Fifteenth Street, New York City, on Sunday morning, December 5th, after a long illness, of cirrhosis of the liver, aged 57 years. There is probably no one outside of the profession of veterinary medicine who was a better friend to it, nor one who did as much disinterested work for its advance-

ment. Connecting himself with its fortunes in 1870 as Professor of Physiology at the old New York College of Veterinary Surgeons, he has labored in its ranks ever since, with no hope of reward other than the love he bore to the struggling profession. First attracted to it by the enthusiasm of the little handful of men working to implant the true science in America, he withdrew from the old school when it was disrupted in 1875, and accepted a like position at the American when it began its career, and he never relinquished his work until a year or two ago, when his son, Dr. John Bertune Stein, who had received his father's enthusiasm for the veterinarian, took up the work his sire had done so long and well.

Born in Hungary, the son of the surgeon-general of the Hungarian army under the famous Louis Kossuth, he came to America as a child with his father when the revolution started in that country, and was in the carriage with a twin brother following Kossuth in the demonstration made in his honor in New York City.

He was attending surgeon to Charity Hospital, New York; wrote several works on surgery, having an international reputation as a writer on that subject; was a professor in the New York College of Medicine; a member of the New York County Medical Society and the Academy of Medicine. He served as a surgeon in the army until the surrender of Lee. A widow and four children survive him.

C. C. TIETJENS, D. V. S.—At San Francisco, Cal., December 11, 1897, C. Chauncy Tietjens, graduate of the American Veterinary College, class of 1897, died of tuberculosis. He was an ambitious student, and studied persistently to attain his education, handicapped by the continual tightening of the hand of his insidious malady, and, when his object had been attained, found that his labors had been in vain, that his days were numbered. How sad, at the threshold of a brilliant and coveted career.

JOHN H. ADAMSON, M. D. C., formerly professor of anatomy in the United States College of Veterinary Surgeons, Washington, D. C., died in St. Paul, Minn., Oct. 25, from injuries received from the kick of a horse which he was treating, and resulting in perforation of the small intestines. Dr. Adamson graduated from the Chicago Veterinary College in 1893, having passed his first session at the New Veterinary College, Edinburgh, Scotland, and was 39 years old at the time of his death.

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A. L. HUMMEL, M. D., late of the University of Pennsylvania and former publisher of the *Journal of Comparative Medicine and Veterinary Archives*, died at Denver, Col., October 24th, aged 40 years.

SOCIETY MEETINGS.

MONTREAL VETERINARY MEDICAL ASSOCIATION.

The regular meeting of the society was held in the library, the President, Prof. Charles McEachran, occupying the chair. There were also present Drs. Martin, Thurston, and Sugden, and a full attendance of members.

After roll-call and the reading of the minutes, the question was raised as to the binding in yearly volumes of the various magazines belonging to the society, and the President appointed Messrs. Spanton and Wallis to look them over and report any numbers that might be missing, in order that they should be replaced.

Mr. Pfersick then reported an operation for the removal of a fourth upper molar in a horse, by trephining. He stated that the patient had been treated by a quack for three months for indigestion, and, no improvement being made, the owner had come to him. On examination, he found the animal to be suffering from a decayed upper molar on the right side, and that there was only a slight extension projecting above the gum. An attempt to seize this with forceps failed, owing to the stump breaking off, and the owner insisted upon having it removed. Mr. Pfersick decided to trephine. This operation he performed successfully after placing the animal under the influence of chloroform, treating the resulting wound with daily administrations of antiseptic plugs and injections. Two months later the owner informed him that the cavity was healing up rapidly and the general condition of the animal had improved greatly.

A short discussion ensued as to the advisability of undertaking this operation frequently, the chairman stating that out of many experiences of his own but few had done well, owing partly to the neglect of attendants in keeping the socket clean and to the trouble caused by the opposite molar growing up into the vacant space. He requested that the case be again reported on.

Mr. Paquin followed with an essay on "Rabies." After tracing its history from the time of Aristotle to the present, he

enumerated the various theories as to its causes, the most direct one being that of inoculation with the saliva of a rabid animal. The different periods of incubation, which he stated might extend from three days to a year or more, were attributed to the quantity of the virus inoculated, also the extent and locality of the wound. The symptom of the raving form and the mute or paralytic form were carefully described, as was the manner in which the animal being at one stage unable to swallow would go into convulsions on being given water, which had been the cause of this disease being erroneously called hydrophobia. As regards differential diagnosis between this and certain other diseases with which it might be confounded, he especially pointed out the inclination of an animal to bite itself, or any object coming across its path, and to swallow, before paralysis of the pharynx occurred, stones, chips, and other foreign matter. As preventive measures after inoculation, he stated that cauterization or excision of the wound, if performed within a reasonable time, had in most cases enabled people to escape, owing to the fortunate fact that the virus was very slowly absorbed. The wisest course to pursue, however, was at once to go to the nearest Pasteur Institute, where a cure and immunity for from three to five years could be obtained in ninety-nine per cent. of the cases. A vapor bath at a hundred and twenty degrees, for fifteen or twenty minutes, was also often successful. This cure was discovered by Dr. Buisson, thirty-five years ago, who, having been bitten by a rabid patient and the symptoms being developed in himself, resolved to die in a vapor bath, which to his surprise completely cured him. In conclusion, he pointed out the folly of killing dogs that had bitten people, when the proper course should be to keep them quietly in confinement, to notice whether symptoms of rabies were developed or not.

Dr. Martin, in response to a request from the chair, then addressed the meeting. He stated that rabies attracted more attention in Europe, owing to its greater prevalence there. During a visit to Paris he had spent some time at the Pasteur Institute and had been much struck with the affectionate manner of the afflicted animals, also their peculiar shrieking bark, which was so characteristic that people were able to detect a rabid animal by hearing it. It had been proved, he said, that the virus traveled along the nervous system, for if a subject were inoculated, and the nerve trunk then divided, it would often escape. Continuing, he described the method in which the virus was prepared for inoculation against the disease, and

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with regard to the periods of incubation, stated that a bite on the face was most rapidly fatal.

The President then thanked Dr. Martin, and congratulated the society upon the opportunity they had had of listening to such an able authority. Considering the ground had been so well covered, he would not detain them beyond mentioning that it was not necessary to have a scar. The mere fact of having one's face licked by a rabid dog was sufficient for inoculation. The disease, he said, was most frequently seen in foxhounds and mongrels, owing to their habits of cohabitation, but during his practice in Canada he had never yet come across a case, though it was stated that an officer in Quebec, some years ago, had died from the bite of a rabid fox.

There being no further business, the meeting was adjourned.

W. B. WALLIS, *Secretary*.

KEYSTONE VETERINARY MEDICAL ASSOCIATION.

The November meeting was called to order on the 9th inst., by Vice-President H. P. Eves, Dr. Pearson having sent word that it would be impossible for him to be present early. Those present were Drs. J. Cheston Morris, Robt. Gladfelter, John B. Raynor, Otto G. Noack, G. W. Shaw, F. S. Allen, H. P. Eves, W. H. Hoskins, W. S. Kooker, Chas. Lintz, Jas. T. McAnulty, Leonard Pearson, J. B. Rayner, W. L. Rhoads, Thomas B. Rayner, C. J. Marshall, John W. Adams. Also, Messrs. J. M. Megary, Lewis D. Horner, A. E. Cunningham, Bassett Kirby, P. K. Jones, John J. Repp, Wm. Hughes, J. E. Spindler.

After the regular routine of business, Dr. Kooker reported a case which he had diagnosed as azoturia. After giving the history and treatment, from which he had received but fair results, he said he wanted advice.

Dr. Hoskins thought from the history and progress he would consider it a case of immobility.

Dr. Eves spoke of having a number of just such cases in certain localities, and felt it was due to some cerebral lesion, but could not say just what, as the attacks were short and invariably ended in death.

Drs. Pearson and Adams now came in, and upon Dr. Pearson's taking the chair he called upon Dr. Adams for his paper on "Opacities of the Crystalline Lens in the Domestic Animals." Dr. Adams dealt with his subject strictly from a practical standpoint. He first gave the names of the many opacities, more commonly known as cataracts; then told of the symptoms

and conditions by which each might be known; he then told of the treatment and possible chances of recovery, explaining the different operations and the many appliances from which one might choose.

Dr. Pearson now read a paper on "Methods of Meat Inspection Now in Vogue throughout the Civilized World,"* and he offered many valuable suggestions for the improvement of the inspection of Philadelphia's meat supply.

During the general discussion which followed he suggested that the killing here be done at a central abattoir, or that all killing be done at certain hours, so the inspectors might more thoroughly cover the ground.

Dr. Schrieber, one of the present inspectors, told of the work they were doing. He explained the present method of inspection, and told how and why they were greatly handicapped by the present conditions.

Dr. Hoskins said the people of New York City owed much to their Woman's Health Association, who had been fighting for seven or eight years to improve their inspection of meat and milk, which is now done under a high standard, while the surrounding towns are satisfied to take any and all meats dumped upon their market stalls.

Drs. Otto G. Noack and W. S. Kooker thought we should give special attention to market inspection. Dr. Adams thought we should first control the killing through central abattoirs, then look after the markets for tainted and otherwise unwholesome meat.

Dr. Allen spoke of the delivery of milk in glass jars, saying the milkman would fill the jar coming from a pest-house and give it to the next customer. Dr. Morris says this was not the proper method of serving in glass jars. His method was to have all milk bottled at the dairy and sealed with a label bearing date of milking and address of owner. It could then be traced at all times, and if these jars were properly sterilized when returned home disease could not be carried.

An exceedingly interesting report from Dr. E. Mayhew Michener on "Intussusception"* two feet three inches in length of small intestines of colt, operation and recovery.

Dr. J. Cheston Morris now told of the post-mortem held upon Chief Utan, who had so lately died at the Philadelphia Zoo, he having an invagination of four inches.

Dr. Hoskins, as chairman of committee appointed to confer

* Printed elsewhere in this issue.

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with the Woman's Health Protective Association, now reported what had been done, and gave notice of meeting to be held by Woman's Health Protective Association at an early date, to which all veterinarians would be more than welcome. The hour being late the meeting now adjourned, though there were a number who wished to report cases.

W. L. RHOADS, D. V. S., *Sec.*

CHICAGO VETERINARY SOCIETY.

The December meeting of this society took place on the 9th at the Sherman House, and was called to order by President R. G. Walker, and twenty-two members responded to the roll-call. The minutes were adopted as read.

The Chairman, in his remarks, recorded the fact that during the last month he had succeeded as President of this society in ousting an empiric as veterinary attendant upon the horses belonging to the Board of Education, and had installed a member of this society in his stead.

The Secretary read a letter received from the Civil Service Board of Commissioners confirming their verbal promise to hold an examination of veterinarians practicing in the city with the object of determining the fittest one for appointment as veterinarian to the police horses of the city. The letter, however, in its final ambiguous sentence evaded giving a definite date for the same.

Report of Committee on Legislation.—The above subject was discussed very thoroughly, and the discussion resulted in the following motion: "That the Secretary be instructed to write to the Civil Service Board of Commissioners asking them to appoint a time at which they would meet our Legislative Committee with a view to obtaining the board's decision regarding the date of the promised examination for the appointment of veterinary surgeon to the police horses of the city." It was moved by Dr. E. L. Quitman, and seconded by Dr. McGrath, and carried by the meeting.

Report of the Special Committee appointed at our last meeting to "draft a guide which would aid us in distinguishing a sound from an unsound, or a 'serviceably sound' horse when under professional examination." Dr. Jos. Hughes, as chairman of that committee, made the report. The committee found that this work exceeded in volume the time at their disposal to accomplish it. They, however, made a list of 140 blemishes,

defects and diseases which ought to be severely dealt with, and recommended that the matter be discussed and passed upon by the entire society at our regular meetings, and further that a stenographer should be engaged to report the discussion with a view to publication in the veterinary journals, the said report first to be edited by our Committee on Literature and Publication. The recommendation was well received by the members, and resulted in the following motion of Dr. Gysil's: "That members be appointed at each meeting to lead the discussion on one or more of these abnormal conditions enumerated in this list, and that a stenographer be hired to report such discussions with a view to their publication, after being edited by our Committee on Literature and Publication."

The Board of Censors had no report to make, but their function was called into action in the following manner. On October 14th, the following motion was carried by the meeting: "That any of our members who are assistants of the present State Veterinarian (the same being an empiric and therefore objectionable) be invited to appear before our Board of Censors at our next regular meeting, and show cause why their resignations should not be called for by the Society." Two of our members being in that position, were so notified, and neither of them appeared on November 4th, at our meeting, as requested, nor made any communication on the subject to the Secretary. Dr. Jos. Hughes, as Chairman of this Board, stated that the appointed time for these gentlemen making their defense had passed and that expulsion from the Society was in order. Still, as one of the gentlemen was present, a motion to reopen the subject ought to be in order. This was allowed by the chair, the motion was put and carried, and the member in question invited to give his reasons for continuing to hold his commission. This member stated that he had been many years in that service and that it did not matter to him who was State Veterinarian, that friends whom he had consulted had advised him not to give up his position, that the blunder was on the part of the Governor in appointing such an officer, and that he wished to retain his membership, but had resolved to hold his commission. Some of the members who spoke inclined to the opinion that he should be allowed to retain both membership and commission. Dr. Hughes, practically alone, stood firmly by his initial statement, and asserted that expulsion was the only logical course for the society to take. Upon motion, all action in the matter was postponed until next meeting.

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After some further routine business the meeting was adjourned. JAMES HENDERSON, M. R. C. V. S., *Sec'y.*

VETERINARY MEDICAL ASSOCIATION OF NEW YORK COUNTY.

The December meeting was called to order at 8.30 o'clock on Wednesday evening, Dec. 1, 1897, at the New York Academy of Medicine, by the President, Dr. Huidekoper. The following members responded to roll-call: Drs. Bretherton, C. C. Cattnach, J. S. Cattnach, Delaney, Ellis, Farley, Huidekoper, Hanson, Mac Kellar, Neher, O'Shea, Robertson and Ryder (13).

Reports of Committees.—The committee appointed by the President to search the register, in reference to the qualification to practice of Messrs. Grenside and Hinkston not being present, President Huidekoper reported that Hinkston was *not* eligible to qualify by virtue of the penal code, he having been guilty of a felony.

The following communication from Dr. John J. Cattnach was next read by the Secretary:

Dr. R. W. Ellis.

DEAR SIR :—As I am about to retire from the veterinary profession, would beg of you to hand in my resignation to the Society.

Very truly yours,

JOHN J. CATTNACH.

Moved and seconded, that the resignation be accepted with the regrets of the association. Carried.

Next in order was the election of officers for 1898. Nominations as follows: For President, Dr. Huidekoper and Dr. Bell; Vice-President, Dr. Robertson and Dr. Hanson; Treasurer, Dr. C. C. Cattnach, Dr. Ryder and Dr. Hanson; Secretary, Dr. Ellis. Result, by ballot for first three officers, Dr. Huidekoper was elected President, Dr. Robertson Vice-President, and Dr. Hanson Treasurer. In election of Secretary, it was moved and seconded, that the by-laws be suspended, and the election declared unanimous. Carried.

Next business in order was the Treasurer's report. The retiring Treasurer, Dr. C. C. Cattnach, submitted the following report for the two years in which he has served the association in that office: Feb., 1896, balance received from former Treasurer, \$13.18; received from Secretary, \$534.00; total, \$547.18; expenditures, \$524.90; leaving a balance in treasury of \$22.28. Appended to this was an itemized list of the expenditures. Moved and seconded that the report be accepted. Carried.

Reports of Cases.—Dr. Neher recalled a case reported by

him some time ago which he had diagnosed as purpura hæmorrhagica, which he says was entirely wrong, as he has since had evidence that the conditions found were due to traumatism.

Remarks by members.

Moved and seconded that the meeting adjourn. Carried.

ROBERT W. ELLIS, D. V. S., *Secretary*.

ILLINOIS STATE VETERINARY MEDICAL ASSOCIATION.

The fifteenth annual meeting of the association was held at the Sherman House, Chicago, Nov. 3, 1897, and was called to order at 10 o'clock A. M., Dr. Alverson, Vice-President in the chair. Roll-call showed a rather poor attendance, but the members kept dropping in till the room was crowded.

The minutes of the previous meeting were read and approved.

Moved by Dr. Tyler, seconded by Dr. Wilson, that Dr. H. Thompson, of Manhattan, be reinstated on payment of dues to date. Carried.

The treasurer reported moneys on hand, \$35.22, and the report was accepted.

Moved by Dr. Wilson, seconded by Dr. Ryan, that the by-laws be suspended for the purpose of balloting for new members. Carried.

Drs. R. Hoadley, Barr of Maroa, and C. G. Davis, of Ottawa, were elected to membership.

The meeting then adjourned for dinner.

The meeting was called to order at 2.30 P. M. by the Vice-President.

Dr. James Henderson read a paper on "Milk Inspection," which was not only fully discussed by the members present, but also by the representatives of the principal dairies, who were present by invitation.

Dr. A. H. Baker read a paper on "Icterus in the Horse," which was listened to attentively and thoroughly discussed.

Dr. Tyler's paper on "Phlegmonous Erysipelas," resulting from a blistered fetlock, led to considerable discussion.

A vote of thanks was tendered to the essayists.

Under the head of election of officers, the following gentlemen were elected: For President, Albert Babb, Springfield; Vice-President, W. J. Martin, Kankakee; Secretary, S. S. Baker, Chicago; Treasurer, R. G. Walker, Chicago.

The new President appointed the following Committees:

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Arrangement—Alverson, Campbell and Weese; Programme—Newby, Henderson and Brown; Censors—A. H. Baker, Tyler and Welch.

Under the head of new business, Dr. A. H. Baker moved, seconded by Dr. Tyler, that the money contributed by Drs. Campbell and Alverson for legislative purposes be refunded. Carried.

Dr. Babb presented a bill for monies expended for legislation purposes, amounting to \$22.00. A bill from the Secretary for fees and for printing, amounting to \$45.13. They were audited and ordered paid.

Under the head of miscellaneous business, Dr. A. H. Baker spoke at some length on the subject of the members of the association acting as Assistant State Veterinarians under a non-qualified man. Dr. Alverson, one of the assistants present, said in defense of himself, that he would resign if all did in a body, or if a majority would, and that if he resigned, another qualified man would fill his place, and he did not think he ought to resign and let some else have the berth. Dr. Walker thought all should resign and not hold on because some one else would slip into their shoes, and if all resigned the Governor would see he had made a mistake and appoint a qualified man. Dr. Tyler said he was under obligations to the members of the Live Stock Commission; they wanted him to serve, and he felt he ought to serve, and he felt he ought to hold on to the office: he did not think anything we could do would affect Gov. Tanner; he did not know what to do, but thought he would hold on. Dr. Martin said he was slated for the position before the present incumbent was appointed, and felt he had to hold his position in order to placate his political friends. Still he was not particular what he did. He thought a man could do as he liked so long as he did not violate the Code of Ethics of the association. He thought it was interfering with a man's personal liberty. Moved by S. S. Baker, seconded by Dr. Walker, that the question of the members resigning their official positions, be laid over till the spring meeting. Carried.

Moved by Dr. Walker, seconded by Dr. Hughes, that the members in arrears for dues be notified to settle or be expelled. Carried.

Moved by Dr. Alverson, seconded by A. H. Baker, that the next meeting be held in February, at Bloomington. Carried.

On motion meeting adjourned.

S. S. BAKER, *Secretary*.

MISSOURI VALLEY VETERINARY MEDICAL ASSOCIATION.

The regular quarterly meeting was held at the Kansas City Veterinary College on the evening of December 8th. The meeting was one of the very best ever held by the association; some of the oldest members expressed themselves that it was the best meeting, all things considered, that they ever attended. Every paper on the programme was read by its author, and the members present entered into the discussions with great interest.

The meeting was called to order by the President, Dr. Hunter. Members present: Drs. Wright, Black, Moore, Sihler, Harrison, Stewart, Steddom, Hopkins, Kaupp, Johnson, Hunter and Heck. Visitors of the profession: Dr. Ewing of this city, and Dr. Knivley of Topeka, Kansas, and many students of the Kansas City Veterinary College.

Dr. Heck was elected Secretary and Treasurer to fill vacancy.

The literary programme was good and the discussions which followed the papers brought out many interesting and valuable ideas. Dr. Sihler's paper on "A Nasal Polypus" was a history of a case met by him in practice. The tumor being a large one situated at the posterior nares, closely adherent to the vomer and adjacent tissues. The animal breathed with very great difficulty. The operation consisted in cutting through the trachea and larynx, and lifting out the tumor. Operation successful, recovery rapid and satisfactory.

Dr. Harrison read reports of several cases; the one drawing out the most discussion was "Rabies." The author thought cattle more susceptible to rabies than men.

Dr. Moore read report of case of "Traumatic Pericarditis," which was well discussed.

Dr. Steddom finished the programme by a paper on "Injuries to the External Ear." He advanced a new idea on treating ears that have been skinned and incline to curl. He favored splitting the cartilage and allowing same to heal before stitching up. Dr. Moore reported good results in split ears from simple stitching and coating surface with glue.

W. A. HECK, D. V. M., *Secretary*.

NEW YORK STATE VETERINARY MEDICAL SOCIETY.

The President of this Society, Dr. W. L. Baker, has appointed the following committees for the ensuing year:

Executive:—N. P. Hinkley, Chairman, James Law, Roscoe R. Bell, John A. Bell, C. D. Morris.

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Legislative :—William Henry Kelly, Chairman, James Law, Arthur O'Shea, C. D. Morris.

By-Laws :—Roscoe R. Bell, Chairman, James Law, C. D. Morris.

Arrangements :—C. D. Morris, Chairman, Harry D. Gill, Arthur O'Shea, Robert Dickson, E. B. Ackerman.

County Secretaries :—A. G. Wicks, Schenectady, Schenectady Co.; H. B. Ambler, Chatham, Columbia Co.; George H. Berns, Brooklyn, Kings Co.; John A. Bell, Watertown, Jefferson Co.; W. L. Baker, Cortland, Cortland Co.; A. W. Baker, Oneonta, Otsego Co.; E. F. Bettinger, Chittenango, Madison Co.; H. E. Clark, Newburg, Orange Co.; James Carnrite, Amsterdam, Montgomery Co.; Charles Cowie, Ogdensburg, St. Lawrence Co.; J. M. Chase, Seneca Falls, Seneca Co.; W. H. Carpenter, Johnstown, Fulton Co.; J. M. Currie, Rome, Oneida Co.; A. Crowforth, Lockport, Niagara Co.; E. M. Casey, Oxford, Chenango Co.; G. G. Dean, Tulley, Onondago Co.; O. B. French, Honeoye Falls, Monroe Co.; J. A. Genung, Ithaca, Tompkins Co.; F. C. Grenside, Mt. Morris, Livingston Co.; H. D. Gill, 154 East Fifty-seventh Street, New York, New York Co.; R. C. Jones, Port Jefferson, Suffolk Co.; W. H. Kelly, 195 Western Avenue, Albany, Albany Co.; W. W. Kennedy, Fulton, Oswego Co.; F. L. Kilborne, Kellogsville, Cayuga Co.; G. C. Kesler, Holley, Orleans Co.; E. Latourell, Yonkers, Westchester Co.; C. D. Morris, Pawling, Dutchess Co.; James McKee, Stapleton, Richmond Co.; H. McWhinnie, Troy, Rensselaer Co.; J. McCrank, Plattsburgh, Clinton Co.; F. D. Markham, Port Leyden, Lewis Co.; T. F. O'Dea, Saugerties, Ulster Co.; Romanzo Perkins, Hardys, Wyoming Co.; D. H. Rowe, Little Falls, Herkimer Co.; J. L. Ronan, Corning, Steuben Co.; D. S. Saylor, Glens Falls, Warren Co.; Harry Sutterby, Batavia, Genessee Co.; W. B. Switzer, Williamson, Wayne Co.; W. J. Wadsworth, Cobleskill, Schoharie Co.; John Wende, 1595 Main Street, Buffalo, Erie Co.

CLAUDE D. MORRIS, *Secretary*.

ONTARIO VETERINARY COLLEGE MEDICAL SOCIETY.

At the meetings of this Society the following papers have been read during November. Many of the papers and discussions were unusually interesting and instructive.

Essays—"Sheep-rot," by J. A. Raleigh; "Postpartum Hæmorrhage," W. D. Brand; "Hog Cholera and Swine Plague," B. Royer; "Ringbone," J. Young; "Castration," T. Sims; "Tuberculosis and Its Relation to the Veterinarian," C. W. Fisher;

"Ergotism," S. Caldbick; "Veterinary Profession," J. W. Parks; "Tetanus," J. S. Pollard; "Lymphangitis," G. H. Davidson.

Communications—"Pneumonia," W. A. Campbell; "Simple Ophthalmia in Sea Lion," J. L. Devereaux; "Laceration of Vagina," W. D. Brand; "Symptomatic Anthrax," G. T. Elliott; "Bruise of Calcaneo-cuboid Ligament," J. E. Ellis; "Removal of Carotid and Jugular," E. R. Stockwell; "Glanders," T. Lambrechts; "Laminitis," G. H. Davidson; "Enteritis," T. J. Fletcher; "Impaction of Colon," T. Sims; "Mammitis in Mare," J. Young; "Parturient Apoplexy," B. W. Groff; "Lymphangitis," D. H. McKay; "Eventuation," W. E. Fairbanks.

C. W. FISHER, *Secretary*.

MASSACHUSETTS VETERINARY ASSOCIATION.

The regular monthly meeting of the Massachusetts Veterinary Association was held at 19 Boylston Place, on Wednesday evening, October 27th.

President Winchester called the meeting to order at 8 P. M. Members present: Drs. Lee, Lewis, McLaughlin, Parker, Pierce, Soule, Stickney, Williams, Winchester, and Winslow.

Minutes of previous meeting read and adopted.

Drs. Albert A. Etienne and Clarence E. Beuchstead were elected members of the association.

Drs. Soule, McLaughlin, Pierce and Winslow reported interesting cases.

The subject of a State Veterinary Law was fully discussed, and a committee was appointed to draft a bill and report at the December meeting of the association.

HENRY S. LEWIS, *Secretary*.

IOWA STATE VETERINARY MEDICAL ASSOCIATION.

The next meeting of this association will be held in Des Moines on January 12th and 13th, 1898. Papers for this meeting are promised as follows: "Immunity," with stereopticon views, Dr. A. T. Peters; "Removal of Clitoris to Cure Viciousness," Dr. S. H. Johnson; "Influenza," Dr. S. H. Kingery; "Cases of Interest in Practice," Dr. R. R. Hammond; "Parturient Apoplexy," Dr. J. Thomsen; "Reflex Paralysis or Paralysis from Indigestion," Dr. J. G. Parslow; "Dairy Inspection," Dr. J. W. Griffith; "Practical Sanitation," Dr. J. I. Gibson; "Horse Breeding; How to Breed for Foreign Market," Dr. T. A. Bown; "Notes from Practice," Dr. J. H. McLeod.

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As you see, we have a good programme, and I am anticipating a first-class meeting. JNO. E. BROWN, *Secretary*.

GENESEE VALLEY VETERINARY MEDICAL ASSOCIATION.

At the meeting of this association held on Dec. 9th, at the Livingston Hotel, Rochester, N. Y., most of the time was occupied in reading and accepting the by-laws which the committee had framed, and they are now in the hands of the printer. In the future meetings will be held in January and July.

After the by-laws had been disposed of, a paper was read by Dr. Palmer, of Scottsville, it being in the nature of an interesting case report. Several other cases were reported, and an interesting discussion followed, a number of valuable specimens being exhibited.

A very interesting and instructive address was delivered by the President. A. GEORGE TEGG, *Secretary*.

OHIO STATE VETERINARY MEDICAL ASSOCIATION.

The annual meeting of this association will be held at the Hotel Goodale (opposite the Capitol), Columbus, Ohio, on January 13, at 8 A. M.

All graduate veterinarians and veterinary students are cordially invited to attend.

W. H. GRIBBLE, D. V. S., *Secretary*.

NEWS AND ITEMS.

Dr. J. J. E. POE, of Boston, Mass., is at present visiting his old home in Ireland.

THE VETERINARY BLUE BOOK is in the printers' hands, and it is said to be a very complete affair.

ILLINOIS VETERINARIANS have important legislative questions to handle this winter. They should make a repetition of recent events impossible.

OSCAR BUSENER, D. V. S., of Twenty-fourth Street, New York City, has been compelled to relinquish his practice and go to the mountains in search of health.

DR. J. A. HUHNE, D.V.S., of Rondout, N. Y., has suffered the bereavement of the loss by death from cerebral apoplexy of his father, Dr. Augustus Huhne, of the same town.

THE STUDENTS of the Grand Rapids Medical College (Vet-

erinary Department) have organized an association. The proceedings will be published in the February REVIEW.

DR. E. P. SCHAFFTER, formerly employed in the meat inspection service at Kansas City, has been transferred to Cleveland, Ohio, and placed in charge of the inspection at that point.

THE NEXT MEETING PLACE of the U. S. V. M. A., will soon be decided upon by the Executive Committee. There is considerable competition between the East and West for the honor.

At the annual election of officers of the Veterinary Medical Association of New York County the old officers were re-elected, with the exception of the Treasurer, who was replaced by Dr. H. D. Hanson.

THE REVIEW trusts that the long winter evenings may be utilized by veterinarians in writing up interesting cases from their note-books, for publication in its pages. *Non nobis solum.*

HORSE SHOWS have been of great service to horse interests, and incidentally to the veterinarian. They should be encouraged and the best way to do so is to keep dealers out of them as exhibitors.

LOVES THE REVIEW.—A Pennsylvania subscriber writes as follows, under date of Dec. 2: "I subscribe for two American, one English, and one German veterinary journal. I like them all, and cannot see how I could afford to get along without them. But I *love* the REVIEW."

"DAIRY SCHOOLS," by R. A. Pearson, Assistant Chief of the Dairy Division of the Bureau of Animal Industry, is a most instructive bulletin of the Department of Agriculture, being nicely illustrated and full of most useful information for those interested in this very important branch of our food supply.

MARCUS DALY'S BITTER ROOT FARM, in Montana, is a wonderful estate. It contains 16,000 acres and has on it some 600 horses. It employs 425 men the year round and the stables and quarters are a marvel. Every stall is lighted by an electric light while the walls and partitions are of two inch plank with a dead air space in each.

EXPORTING HORSES.—The largest export trade in the history of the Chicago horse market is promised by present indications. The arrival of foreign buyers is earlier than usual and larger numbers of purchasers are expected. While they have

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unlimited orders as to numbers they are more than ever particular concerning the character of the horses that they buy, and insist on a better quality than heretofore. The presence of these buyers will stimulate the market greatly.—(*Breeder's Gazette*.)

MORE INTEREST NEEDED.—A member of the Veterinary Medical Association of New York County writes as follows to the REVIEW: "Do the veterinarians of Greater New York take an interest in their profession? If so, why do they not join the Society and thereby do some good, not only to the profession, but to themselves? All are invited to attend the meetings, which are held at the Academy of Medicine, Forty-third Street, near Fifth Avenue, on the first Wednesday in each month."

PROSECUTING ILLEGAL PRACTITIONERS IN BUFFALO.—Within a short period two convictions have been secured, mainly through the efforts of L. E. Willyoung, D. V. S., of Buffalo, N. Y., against two unlicensed graduates, both parties paying their fines and costs of action without coming to trial. Two others are now held for the grand jury, and an action has been brought against another for dehorning cattle, to recover \$1000. Illegal practitioners of veterinary medicine will probably give Buffalo a wide berth.

LITMUS PAPER IS NOT RELIABLE.—We have much pleasure in giving publicity to a very useful and ingenious little appliance in the form of a "litmus pencil." Its use is so obvious that comment is unnecessary. We have no doubt but that it will soon in great measure supersede the old form of books. To medical men it will certainly be a great boon, as it can be carried in the pocket and contains a practically inexhaustible supply of litmus always ready. It is made by Mr. Tyree, a chemist at Washington, D. C., and mailed to any address for 25c.

TANNED A GIANT BULL'S HIDE.—What is probably the largest bull hide in America has just been tanned and prepared with the hair on at the works of the Henry Lang Company for J. Stern & Sons, Philadelphia, Pa. The bull, when in life, was the famous Duke of Salem, weighing 3000 pounds, and was the star attraction at the opening of an abattoir in Philadelphia on September 30. In the presence of four thousand spectators the animal was led out to slaughter. The ordinary apparatus for slaughtering cattle was too small to use upon the Duke, so a well directed rifle shot in the exact centre of the forehead did the work. The hide weighed 209 pounds in the "green" state,

while the ordinary weight of large bull hides is eighty-five pounds. The hide at the head was two inches thick and had to be cut out, having been too thick to be tanned. The largest leather working machinery known to the trade was too small to work this hide, which necessitated some trimming. The hide contains nearly one hundred square feet.

STARTING A BALKY HORSE.—The following contribution to the numerous and varied "sure cures" for a balky horse is credited to John Haines, the manager of the Tewkesbury stable: "For the benefit of those who have been caused a great deal of anxiety by a balky horse and have lost trains as well as their tempers and even sometimes ruined the horse, the next time they should have the experience or should run across a balky horse, no matter how bad he is, let me tell you how to start him ninety-nine times out of 100. Of course it may fail one time in 100. When a horse balks, no matter how badly he sulks or how ugly he is, do not beat him, do not throw sand in his ears, do not use a rope on the front legs, or even burn straw under him. Quietly go and pat him on the head a moment, take a hammer or even pick up a stone in the street, tell the driver to sit still, take his lines and hold them quietly while you lift up either front foot, give each nail a light tap and a good smart tap on the frog. Drop his foot quickly and then chirp to him to go. In ninety-nine cases out of 100 the horse will go right along about his business, but the driver must keep his lines taut and not pull nor jerk him back. If I have tried this once I have tried it 500 times, and every time I have suggested it people have laughed and even bet \$5 and bottles of wine. So far I have won every bet. This may make you smile, but a horse has more common sense than most people are willing to give him credit for. The secret of this little trick is simply diversion. I am a firm believer that with kindness and proper care and treatment a horse could be driven with a string."

FOR SALE.

A substantial and commodious brick veterinary infirmary, office and residence, centrally located in a thrifty city of 25,000, and surrounded by a very rich agricultural and breeding country.

The leading practice of the entire region has for fifteen years been and is still being conducted in this property.

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